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Prepared for

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16. ABSTRACT The report supplements Volume I (EPA-600/7-77-136a) of the two-volume 1977 EPA report that introduced a methodology to establish Multimedia Environmental Goals (MEGs) for chemical pollutants. It summarizes the original methodology and introduces minor improvements. Improvements include the assignment of a unique identification number to each MEG compound and modification of the original model used to derive MEG values for land or solid waste. Its appendices include: revised category descriptions, an updated master list of organic compounds, a candidate list of compounds to be considered for future MEGs, tabulated discharge MEG values, and hazard potential values. It also includes graphical summaries of MEGs for 586 organic chemicals. The Supplement is to be used in coordination with MEG Volumes III and IV (EPA-600/7-79-176a and -176b) which contain background information summaries and MEG charts for organic compounds in the new MEGs master list.

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Environmental Engineering	Stationary Sources	05E
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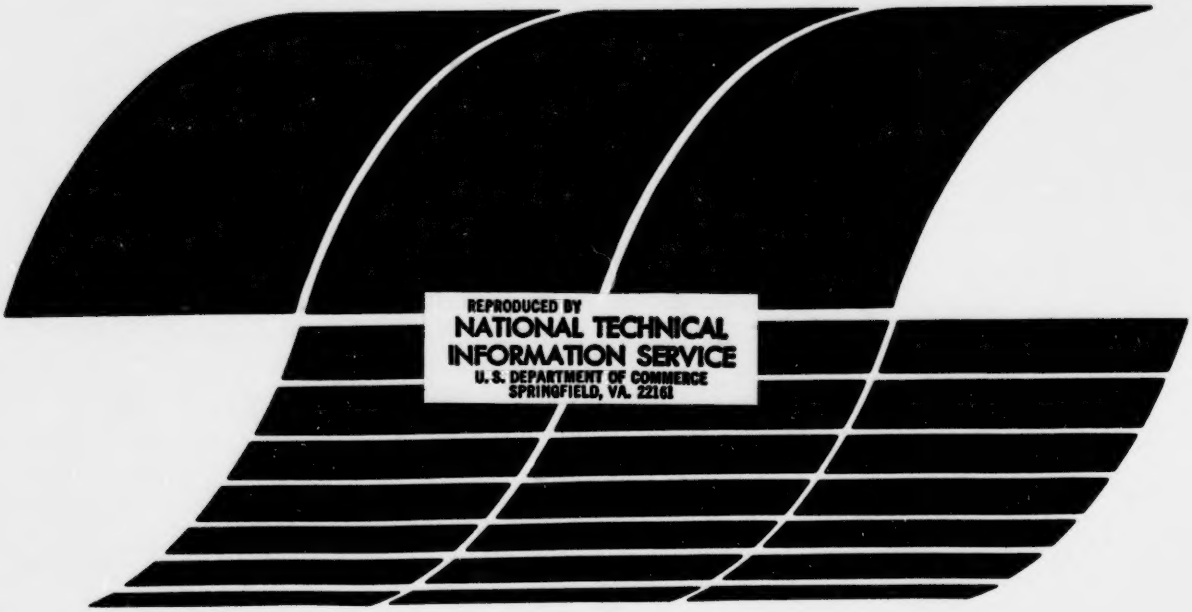

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March 1980

Multimedia Environmental Goals for Environmental Assessment, Volume I (Supplement A)

by

G.L. Kingsbury, J.B. White,
and J.S. Watson

Research Triangle Institute
P.O. Box 12194
Research Triangle Park, North Carolina 27709

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EPA Project Officer: N. Dean Smith

Industrial Environmental Research Laboratory
Office of Environmental Engineering and Technology
Research Triangle Park, NC 27711

Prepared for

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Office of Research and Development
Washington, DC 20460

FOREWORD

To provide for comprehensive environmental assessments of industrial processes, the Environmental Protection Agency's Industrial Environmental Research Laboratory at Research Triangle Park, N. C., is developing a methodology to facilitate the quantitative evaluation and comparison of industrial discharges, emissions and effluents with respect to their potential environmental impacts. This methodology prescribes a systematic approach to the interpretation of data obtained in environmental assessment projects. In order to fully characterize waste streams for such an assessment, pollutant levels must be related to environmental effects. Multimedia Environmental Goals (MEGs) provide the mechanism by which this relationship may be achieved.

This report supplements both the description of the MEGs approach given in Volume I (EPA-600/7-77-136a, November 1977) and the background information summaries and MEG values for some 640 chemical substances presented in Volume II (EPA-600/7-77-136b, November 1977) and Volumes III and IV (EPA-600/7-79-176a and b, August 1979).

As a result of comments and recommendations from users and a critical review panel*, the MEGs methodology is steadily undergoing modification. One such refinement recently adopted involves simplification of the nomenclature. The terms Discharge MEG (DMEG) and Ambient MEG (AMEG) will replace the terms Minimum Acute Toxicity Effluent (MATE) and Estimated Permissible Concentration (EPC), respectively. However, the new terms do not appear in this report in order that the material reported herein may be more easily related to the material in the previous MEG reports.

Other possible future modifications include: the incorporation of additional factors into some of the models to better account for persistence and bioaccumulation of the chemicals in the environment; the use of risk factors for chemical carcinogens; improved definition of uncertainties and corresponding conservative assumptions in the various factors used in the MEG models; and a footnoting system to indicate the specific basis for each MEG value calculated.

Future updates of the MEGs including any revisions in the methodology will be facilitated by the use of MEGDAT, the computerized MEGs data base, due to become fully operational in 1980.

Realizing the valuable role which we feel the MEGs can play in the environmental assessment of industrial processes and also realizing the pioneering nature of the methodology, we continue to welcome constructive comments from MEGs users.

JK Burchard

Dr. John K. Burchard
Director
Industrial Environmental Research
Laboratory/RTP

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*Environmental Assessment Methodology Workshop. Sponsored by the Environmental Protection Agency, Office of Energy, Minerals, and Industry, Industrial Environmental Research Laboratory, Research Triangle Park; and Industrial Environmental Research Laboratory, Cincinnati. Airlie House, VA. January 16-18, 1979.

Abstract

A methodology to establish Multimedia Environmental Goals (MEGs) for chemical pollutants was introduced in November 1977 in a two-volume EPA report entitled *Multimedia Environmental Goals for Environmental Assessment*. Volume I (Supplement A) supplements the earlier MEGs report. A summary of the original methodology is presented and minor improvements are introduced. These include the assignment of unique identification numbers to each MEG compound and a modification to the original model used to derive MEG values for land or solid waste. Included in appendices in this volume are revised category descriptions, an updated master list of organic compounds, a candidate list of compounds to be considered for future MEGs, tabulated discharge MEG values, and hazard potential values. Graphical summaries of MEGs for 586 organic chemicals are also included. This volume is to be used in coordination with MEG Volumes III and IV which contain background information summaries and MEG charts for organic compounds in the new MEGs master list.

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SECTION 1

INTRODUCTION

To provide for comprehensive environmental assessments, EPA's Industrial Environmental Research Laboratory at Research Triangle Park is developing a procedure to facilitate quantitative evaluation and comparison of streams and processes with respect to their potential environmental impacts. The methodology prescribes a systematic approach for interpreting data obtained in environmental assessment projects. The need for Multimedia Environmental Goals (MEGs) arises in this context. In order to fully characterize waste streams for environmental assessment, pollutant levels must be related to their environmental effects. The development of Multimedia Environmental Goals is a first attempt at a procedural approach to evaluate and rank a large number of pollutants for the purpose of environmental assessment.

1.1 DEFINITION

Multimedia Environmental Goals describe levels of contaminants or degradants (in ambient air, water, or land, or in discharges conveyed to ambient media) that (1) are predicted not to produce negative effects in the surrounding populations or ecosystems, or (2) represent control limits achievable through technology.

MEGs are not to be treated as regulations. They are designed for use in ranking chemicals on the basis of predicted environmental acceptability. The MEG values and MEG models are frequently based on very limited data or on data of undetermined reliability. These limitations should be kept in mind by those using the numerical values from the MEG charts and tabulations. Similar caution is advised for those applying the models to generate MEGs for new compounds.

1.2 BACKGROUND

A methodology to establish MEGs for chemical pollutants was introduced in November 1977 in a two-volume EPA report entitled Multimedia Environmental Goals for Environmental Assessment.[1] Volume I of the 1977 report described a system for generating quantitative goals for chemical substances from information currently available in the literature. A master list of approximately 600 chemical pollutants associated with fossil fuels processes or of specific environmental interest was also provided in Volume I, and Minimum Acute Toxicity Effluents (MATE) values for air, water, and solid waste were tabulated for many of the chemicals on the master list. Volume II of the report contained background information summaries and MEG charts for 216 chemical substances selected from the master list. Goals listed on the charts were calculated in accordance with the methodology presented in Volume I. In August 1979, MEG Volumes III and IV[2] were issued to supplement the 1977 MEGs reports. Background Information Summaries and MEG charts comprise Volumes III and IV. The methodology developed in Volume I is applied (with minor revisions) to 586 organic chemicals. MEG values in Volumes III and IV supplant the data for organics in earlier volumes.

1.3 DESCRIPTION OF VOLUME I (Supplement A)

This report, Volume I (Supplement A), presents a brief description of the MEGs methodology, including methodology and format modifications implemented since Volume I, and provides updated appendices for organics. Included are revised MEG category descriptions and an updated master list of organics. A candidate list is also given naming compounds to be considered for MEGs in the future. Updated MATE values and Hazard Potential Values for the organics addressed in Volumes III and IV are tabulated. Graphical summaries of the MEGs for organic compounds are also presented. Alphabetical and molecular formula indices are provided to reduce nomenclature problems and to assist users unfamiliar with the MEGs categories. A final appendix contains a complete MEGs bibliography including all references from Volumes III and IV. (References in Volumes III and IV are provided at the end of each subcategory, but a collective list was not included.)

Evolution of the MEGs is expected to continue as scientists develop better understandings of mechanisms by which chemicals act on man and the environment. The information in this report is provided to support and enhance the use of the multimedia environmental goals, especially in conjunction with the source analysis models (SAMs) being developed for EPA by Acurex Corporation.[3] It is hoped that those involved in environmental assessment sampling and analysis will provide comments and critiques on this material and format and thereby contribute to its incremental improvement.

SECTION 2

SUMMARY OF THE METHODOLOGY FOR ESTABLISHING MULTIMEDIA ENVIRONMENTAL GOALS FOR CHEMICALS

The MEGs methodology introduced in Volume I of the November 1977 MEGs report established models to calculate quantitative environmental goals for chemicals in ambient air, water, and soil, or in gaseous, aqueous, and solid waste discharges. The values generated by the prescribed system of models provide alternative goals for use in environmental assessment. The primary objectives of the original methodology and the system prescribed for calculating goals are summarized in this section. The reader should refer to reference 1 for more complete details of the MEGs methodology.

2.1 TYPES OF GOALS SPECIFIED AND PRACTICAL CONSIDERATIONS

The primary objective of the current chemical MEGs methodology is a systematic approach that can be used to estimate for a large number of compounds 1) maximum concentrations acceptable (i.e., no effect levels) in ambient media, 2) existing levels in unpolluted ambient media (natural background), and 3) maximum concentrations safe for limited duration exposures. These concentrations are the ambient level goals and emission level goals required in environmental assessment to relate effluent chemical characteristics to their potential environmental impacts. Goals based on best available technology are planned but have not been addressed in the development of MEGs to date.

Ambient level goals (i.e., maximum concentrations in ambient media) include estimated permissible concentrations (EPCs) based on potential ecological effects or on predicted toxic levels for man. EPCs describe levels of chemicals believed to be safe for continuous exposure over a lifetime. Existing or proposed ambient standards and guidelines serve as EPCs for regulated (or soon to be regulated) chemicals. EPCs for chemicals not addressed by Federal guidelines are derived from models that utilize available toxic effects information. Oncogenic and teratogenic properties are reflected in a distinct set of EPCs recognizing that the concept of threshold (no-effect level) may not apply to chemicals that are potential carcinogens or teratogens.

Three alternative emission level goals are defined--values describing minimum acute toxicity effluent concentrations, emission goals based on ambient level goals, and goals based on elimination of discharge. Minimum acute toxicity effluent (MATE) values describe maximum concentrations of chemicals in the discharge stream believed to be safe for short-term exposure (i.e., effects attributable to acute exposure will be minimal). MATE values are predicted on the basis of available data pertinent to human health effects or ecological effects. MATEs as emission level goals apply to undiluted discharge streams. Short-term exposures to discharges for which specific chemical component levels do not exceed their prescribed MATE values are not predicted (on the basis of the information available) to cause irreversible human health problems or ecological effects. The acceptability of each stream component may be assessed by comparing the discharge concentration with the component's MATE value. (This approach is described fully in Reference 3.) Potential interactions among chemicals are not documented sufficiently to allow MEGs to properly account for possible synergistic effects. Thus, caution should be exercised in applying MATE values to complex effluents. Bioassay data coupled with a MEGs analysis provide a better screening approach for complex effluents.

The most stringent ambient level goal for a chemical in a given medium may be multiplied by a dilution factor to provide an alternative emission level goal for each discharge component. A dilution factor describes the extent of dilution expected. It is the ratio of the concentration of a pollutant in a discharge stream to the level of the chemical in the ambient receiving medium. In practice, depending upon the extent of dilution, emission level goals based on ambient level goals may be more or less stringent than the MATE values.

Natural background levels may also serve as emission level goals when a dilution factor is applied. Although natural background levels for chemicals in air, water, or soil vary with site, season, and meteorological conditions, an attempt is made to specify levels that indicate naturally occurring concentration extremes. Natural background levels are also used to ascertain whether model derived ambient goals are unreasonably stringent. Ambient level goals should not be lower than natural background levels for any chemical.

Summarized below are several important practical needs and requirements associated with establishing goals for environmental assessment. The MEGs methodology was developed with these considerations in mind.

1. Goals must not conflict with existing Federal standards and guidelines.

2. In the absence of reliably documented "no effect" levels, estimated safe levels derived from models should be conservative.

3. The objective is to set goals--not regulations.

4. For use in the environmental assessment program, it is desirable to have for each chemical a single value goal of each type (i.e., a health based value for each medium and an ecology based value for each medium).

5. Worst case assumptions should be applied in employing available data, i.e., most conservative values should be used when discrepancies arise.

6. Organization of the chemical MEGs should allow systematic utilization. A consistent format is required; a tiered organization is desirable.

7. Provision is needed for evaluating model derived goals to determine if they are reasonable in light of all available information. An override mechanism should be possible if the system produces unacceptable goals.

8. The overall format for presentation of goals should allow direct comparison of existing and projected "best available technology" controlled discharges with emission goals having environmental significance.

9. A method is needed for classifying pollutants to get comprehensive coverage without having to individually consider millions of compounds.

10. A procedure is needed for quantifying relative toxicity of classes of compounds as well as individual compounds to allow a "most-toxic-first" ordering.

11. A uniform approach in applying existing health and ecological effects data is needed as well as a means for directly delineating health/ ecological effects data gaps.

12. A wide variety of potential adverse effects including oncogenic and teratogenic effects must be reflected in the goals.

13. Sufficient information to indicate the basis for alternative goals should be provided.

2.2 BACKGROUND INFORMATION SUMMARIES AND MEG CHARTS

Background information summaries and corresponding MEG charts are prepared for each compound or group of compounds on the MEGs master list. The summaries supply the information that serves as the basis for EPCs and MATE values specified. Data relating to chemical and physical properties, occurrence, related compounds, and associated toxic effects and ecological effects are summarized. Federal guidelines associated with each pollutant are indicated as well. The equations used to calculate EPCs and MATE values are also presented in the background information summaries. Each summary occupies a single page and appears opposite the corresponding MEG chart. Types of information provided in background information summaries are listed in Table 1.

MEG charts are designed to display the numerical emission level goals and ambient level goals. Each MEG chart addresses a single compound or a group of compounds that is treated collectively in a single background information summary. The preferred name of the chemical or group of chemicals addressed and the identification number is supplied in bold letters in the upper right hand corner of each chart. Units are $\mu g/m^3$, $\mu g/L$, or $\mu g/g$ as indicated in the left hand column. MEG values for use in environmental assessment appear in the various columns on the MEG charts.

To illustrate the format for presentation of MEGs, the background information summary and MEG chart for toluene are shown in Figures 1 and 2, respectively.

2.2.1 EMISSION LEVEL GOALS

Emission level goals are displayed in the top half of the MEGs chart (Figure 2). Any of three types of emission level goals based on ambient factors may be supplied for a given chemical. The minimum acute toxicity effluent (MATE) values are based on either health effects or ecological effects. Emission level goals based on ambient level goals also reflect health or ecological effects. The values listed are the most restrictive levels selected from the Ambient Level Goals (lower) portion of the chart. Site specific dilution factors must be applied to ambient goals to translate the values into emission level goals. A column entitled "Elimination of Discharge" (EOD) is provided to display natural background concentrations. These values also require multiplication by dilution factors to yield emission level goals. Footnotes clarify the nature of data supplied under EOD. The values represent highest reported rural concentrations unless otherwise indicated. Technology based goals have not been addressed yet, thus no values appear in the upper left-hand column of the MEG charts.

2.2.2 AMBIENT LEVEL GOALS

Three types of ambient level goals are displayed in the lower half of the MEG chart to allow comparison of different types of MEGs for a given pollutant The format also facilitates comparison of the MEG values for different mate-

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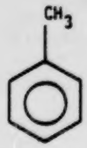
Table 1. TYPES OF INFORMATION SUPPLIED IN BACKGROUND INFORMATION SUMMARIES

Information Type	Specific Data Supplied
Identifying Information	Category; subcategory; identification number; preferred chemical name; subspecies; formula; synonyms; description; WLN
Properties	Atomic number; periodic group; atomic weight; molecular weight; melting point; freezing point; boiling point; density; vapor density; vapor pressure; solubility in water; solubility in liquid; octanol partition coefficient; pK_a; pK_b
Characteristics, Associated Compounds	Chemical characteristics; compound associations; mineral associations; formation; characteristic chemical reactions; biodegradability; persistence in atmosphere; metabolites; precursors
Occurrence in Air	Rural; urban; industrial air conc ($\mu g/m^3$); odor threshold
Occurrence in Water	Level identified in drinking water, surface water, ground water, seawater, or estuarine ($\mu g/\ell$)
Occurrence in Land	Typical level in soil ($\mu g/g$); occurrence in marine sediments, or earth's crust; association with coal or petroleum
Other Occurrences	Occurrence in food, body, aquatic organisms, and vegetation; dietary intake/nutrient value; total intake; uses, production, etc.; sources
Human Toxicity Data	Compounds likely to be toxicologically similar; acute human effects; chronic human effects; relative toxicity of assoc. CPDS; bioaccumulation; biological half-life, reported no-effect dosages; synergisms/antagonisms; absorption routes
Animal Toxicity Data	Acute effects; chronic effects; no-effect levels; LD_{50} or lowest lethal dose (mg/kg, oral rat data preferred); lowest lethal concentration or LC_{50} (mg/m^3); lowest toxic concentration reported (mg/m^3)
Information Relative to Genotoxic Potential (Oncogenicity, Teratogenicity, Mutagenicity)	Evidence of carcinogenicity or teratogenicity (assoc. cpds. considered); evidence of noncarcinogenicity; EPA/NIOSH ordering number (based on oncogenicity or teratogenicity); lowest dosage producing oncogenic or teratogenic response (mg/kg); adjusted ordering number (based on oncogenicity or teratogenicity); evidence of mutagenicity; results of Ames' Test
Aquatic Toxicity	TLM-96 (ppm); sublethal effects; bioaccumulation potential; fish tainting level (PPM); fish tainting, qualitative information
Phytotoxicity	Effects of vegetation (air [$\mu g/m^3$], irrigation, nutrient solutions, soil)
Standards, Criteria, Recommendations, Recognition	Primary and Secondary Ambient Air Quality Standards; National Emission Standards for Hazardous Air Pollutants; TLV (established by ACGIH); ACGIH designation as simple asphixiant or carcinogen; subject of NIOSH criteria document or hazard review document; OSHA designation as cancer suspect agent; NIOSH recommendation; drinking water standards or criteria; water quality criteria for protection of aquatic life, protection of livestock, or irrigation; Toxic Pollutant Effluent Limitations; Recommendations of U.S. Dept. of Agriculture and Land-grant Institutions; FDA declarations; included in National Cancer Institute list of carcinogens to man; included in EPA Consent Decree List; Chemical Industry Institute of Toxicology recognition

CATEGORY: 15A

WLN: 1R

STRUCTURE:



TOLUENE: C_7H_8 (methylbenzene, toluol, phenylmethane). A clear, colorless liquid; sweet, pungent, benzene-like odor. 15A040

PROPERTIES:

Molecular wt: 92.13; mp: -96; bp: 110.6, $14.5^{14.5}$; d: 0.8669^{20}; insoluble in water; vap. press.: 36.7 mm at 30° C; vap. d: 3.14.

NATURAL OCCURRENCE, CHARACTERISTICS, ASSOCIATED COMPOUNDS:

Toluene is a constituent of coal tar; it is generally associated with benzene and xylene. Rural concentration in air is reported as 3.0 to 18.2 ppbc (0.4 to 2.6 ppb, or 1.5 to 9.8 $\mu g/m^3$) (ref. 2).

Odor recognition level is reported as 1.03 to 140 $\mu g/m^3$ (0.27 to 37 ppb) (ref. 3) and the odor threshold level, 2.14 ppm (8 mg/m^3) (ref. 11). Toluene participates to a limited extent in photooxidation reactions (ref. 3).

Toluene has been found in samples of U.S. drinking water supplies in concentrations of 11 $\mu g/\ell$ (ref. 4).

TOXIC PROPERTIES, HEALTH EFFECTS:

Acute poisoning may result from exposure to high concentrations of toluene; a narcotic effect is produced. Human death has resulted from exposure to 10,000 ppm (ref. 7). Toluene is more acutely toxic than benzene; however, severe blood disorders of the type associated with benzene are not reported. Inhalation of 100 ppm has resulted in psychological effects and 200 ppm has affected the central nervous system in humans (ref. 8). Irritative effects to eyes, mucous membranes, and the upper respiratory tract have resulted from exposure to 200 to 500 ppm (ref. 12). Toluene may be absorbed through the skin as well as by inhalation (ref. 12), although the inhalation route is far more important. There is evidence to indicate that at equilibrium, the average toluene concentration per liter of blood is 2.4 mg for each 100 ppm toluene in the environmental air (ref. 13). The biological half-life for toluene is reported to be 0.083 days (ref. 14).

LD_{50} (oral, rat): 5,000 mg/kg. LC_{Lo} (inhalation, rat): 4,000 ppm for 4 hours.

Aquatic toxicity: TLm 96: 100-10 ppm (ref. 8). Concentrations of 0.25 mg/ℓ can cause tainting of fish flesh (ref. 15).

Phytotoxicity: exposure for 35 minutes to 50 ppm of ozonated toluene produced a bronze color on pinto beans (ref. 21). 50 ppm is equivalent to 188 mg/m^3. 24 hr. exposure corrected concentration is $188 \times 10^3 \times .35/1440 = 4{,}570\ \mu g/m^3$ (1.2 ppm).

REGULATORY ACTIONS, STANDARDS, CRITERIA, RECOGNITION, CANDIDATE STATUS FOR SPECIFIC REGULATION:

TLV = 375 mg/m^3 (100 ppm). Toluene is on EPA's Consent Decree Priority III List.

Toluene is the subject of a NIOSH Criteria Document. The NIOSH recommendation for occupational exposure to toluene is 100 ppm as an 8-hour per work day time-weighted average. A ceiling value of 200 ppm is recommended (ref. 12).

Toluene is on the First Priority Chemicals List of Chemical Industry Institute of Toxicology.

MINIMUM ACUTE TOXICITY CONCENTRATIONS:

Air, Health: $3.75 \times 10^5\ \mu g/m^3$ (100 ppm)
Water, Health: $15 \times 3.75 \times 10^5 = 5.6 \times 10^6\ \mu g/\ell$
Land, Health: $0.2 \times 5.6 \times 10^6 = 1.1 \times 10^6\ \mu g/g$

Air, Ecology: $4.57 \times 10^3\ \mu g/m^3$ (1.2 ppm)
Water, Ecology: $100 \times 10 = 1 \times 10^3\ \mu g/\ell$
Land, Ecology: $0.2 \times 1 \times 10^3 = 200\ \mu g/g$

ESTIMATED PERMISSIBLE CONCENTRATIONS:

$EPC_{AH1} = 10^3 \times 375/420 = 893\ \mu g/m^3$
$EPC_{AH1a} = 100/420 = 0.24 ppm$
$EPC_{WH1} = 15 \times 893 = 13{,}400\ \mu g/\ell$
$EPC_{WH2} = 13.8 \times 375 = 5{,}175\ \mu g/\ell$
$EPC_{LH} = 0.2 \times 5.175 = 1{,}035\ \mu g/g$

$EPC_{AE} = 0.1 \times 4{,}570 = 457\ \mu g/m^3$ (0.12 ppm)
$EPC_{WE1} = 50 \times 10 = 500\ \mu g/\ell$
$EPC_{WE2} = 250\ \mu g/\ell$ (to prevent tainting)
$EPC_{LE} = 0.2 \times 250 = 50\ \mu g/g$

Figure 1. Background information summary for toluene

MULTIMEDIA
ENVIRONMENTAL
GOALS

15A040
TOLUENE

	EMISSION LEVEL GOALS						
	I. Based on Best Technology		II. Based on Ambient Factors				
	A. Existing Standards	B. Developing Technology	A. Minimum Acute Toxicity Effluent		B. Ambient Level Goal*		C. Elimination of Discharge
	NSPS, BPT, BAT	Engineering Estimates (R&D Goals)	Based on Health Effects	Based on Ecological Effects	Based on Health Effects	Based on Ecological Effects	Natural Background*
Air, $\mu g/m^3$ (ppm Vol)			3.75E5 (100)	4.57E3 (1.2)	893 (0.24)	457 (0.12)	1.5 to 9.8
Water, $\mu g/l$ (ppm Wt)			5.6E6	1.0E3	5,175	250	11†
Land, $\mu g/g$ (ppm Wt)			1.1E6	2.0E2	1,000	50	

*To be multiplied by dilution factor

	AMBIENT LEVEL GOALS				
	I. Current or Proposed Ambient Standards or Criteria		II. Toxicity Based Estimated Permissible Concentration		III. Zero Threshold Pollutants Estimated Permissible Concentration
	A. Based on Health Effects	B. Based on Ecological Effects	A. Based on Health Effects	B. Based on Ecological Effects	Based on Health Effects
Air, $\mu g/m^3$ (ppm Vol)			893 (0.24)	457 (0.12)	
Water, $\mu g/l$ (ppm Wt)			5,175	250	
Land, $\mu g/g$ (ppm Wt)			1,000	50	

†Drinking water supplies.

Figure 2. MEG chart for toluene

rials. Federal standards or criteria, based on health or based on ecological effects, are specified in the two left hand columns. MEGs called estimated permissible concentrations (EPCs), also based on health effects or on ecological effects, are supplied for compounds not addressed by Federal guidelines. MEG values appear in the far right column for compounds exhibiting significant oncogenic or teratogenic properties. Because certain compounds are toxic as well as oncogenic or teratogenic, values may appear in two or three of the EPC columns. In general, EPCs are not specified for a particular medium if Federal guidelines apply.

2.3 SELECTION CRITERIA FOR THE MASTER LIST OF CHEMICALS TO BE ADDRESSED BY MEGs

Chemicals included in the MEGs master list were selected on the basis of the following criteria:

1. Any chemical or class of chemicals associated with fossil fuels processes should be included.

2. Chemicals addressed by existing Federal guidelines or for which there are available toxicity data (TLV®, LD_{50}, evidence of carcinogenicity, etc.) should be included if they are representative of a class of chemicals associated with fossil fuels processes.

3. Chemicals known to be present as pollutants in the environment or that are highly toxic may be included even if they are not associated with fossil fuels.

The third criterion was applied in a few cases only, so the major focus of the list remains the fossil fuels pollutants. Several chlorinated hydrocarbons (including PCBs) were included in an effort to provide worst case coverage for important categories. All Consent Decree Pollutants are included in the list.

2.4 ORGANIZATION BY CHEMICAL CATEGORIES AND IDENTIFICATION NUMBERS

To reduce nomenclature problems and to organize compounds into structurally and toxicologically similar groups, a chemical category system has been used throughout the MEGs report. Pollutants to be addressed by MEGs are organized into categories on the basis of their chemical structure. Twenty-six major organic categories have been established, and within each category two or more subcategories are specified. A listing of these categories and subcategories is provided in Appendix B along with a discussion of the chemical characteristics of the compounds assigned to each. Except for Category 26, the category list and descriptions are basically the same as those presented in Volume I, Appendix A. (See explanation in Section 3.2 in this volume.) Several new subcategories are specified.

Identification numbers have been assigned to each MEG compound. These numbers indicate the category and subcategory of the chemical as well as its position within the subcategory. Identification numbers are discussed in more detail in Section 3.1.

A complete listing of the organic chemicals ordered by MEG ID number is given in Appendix C, this volume. This listing supersedes the master list of organic chemicals presented in Volume I, Appendix B. The background information summaries and MEG charts in Volumes III and IV, the tabulated MATE values in Appendix D (this volume), and the listing of Hazard Potential Values in Appendix E (this volume) are ordered by the MEG ID numbers.

There are several reasons for organizing the MEGs listings by ID numbers (hence by categories). The categorical approach based on functional groups allows the user to consider MEGs for a group of related compounds or for a single specific chemical. In the absence of toxicity data to characterize a specific chemical of interest, it is often reasonable to use information available for a different compound of similar structure as a surrogate to estimate the needed MEG values. (Without an assigned MEG value there would be no way to assess the relative contribution of that compound in terms of the potential environmental impact of the stream.) Also, the results of chemical analysis frequently do not distinguish between several isomers or structurally similar compounds, so a categorized approach is beneficial in selecting the best data to be used in an assessment procedure.

For users unfamiliar with the categories used for organizing MEG compounds, an alphabetical index of preferred names and synonyms for organics is provided in Appendix F, this volume. A molecular formula index is also included. It is expected that regular users of the MEGs will become familiar with the category system and will find it simpler to find information on a given compound by going directly to the appropriate category to locate the compound rather than seeking its ID number from the alphabetical index.

2.5 MODELS TO GENERATE MEGS

Models that are used to generate MEGs for chemical pollutants are described in detail in Sections 5 and 6 of the 1977 MEGs report, Volume I.[1]

Tables 2 and 3 list the equations recommended for calculating EPCs and MATEs and indicate the particular section in Volume I where the model is discussed. Equations for calculating MEGs based on health effects are given in Table 2. Table 3 supplies the equations to calculate values based on ecological effects.

Definitions and brief explanations of some of the terms associated with the MEG models are provided below:

Threshold Limit Values (TLVs®) are levels of contaminants considered safe for workplace atmosphere, as recommended by the American Conference of Governmental Industrial Hygienists (ACGIH). Time-weighted averages for exposure durations of ten hours per day or 40 hours per week are specified for more than 500 chemicals.[4]

National Institute of Occupational Safety and Health (NIOSH) Recommendations also apply to occupational exposure limits for chemical contaminants. These recommendations are analogous to the TLVs® but frequently are more stringent. Ceiling values as well as time-weighted exposure limits are recommended. More than 75 NIOSH criteria documents addressing one or more specific chemicals are currently available. These criteria documents serve as the bases for the NIOSH recommendations.[5]

Genotoxic Chemicals include carcinogens, teratogens, and mutagens. The term means toxic to genetic material.

LD(50) is the lethal dose to 50 percent of an animal population tested. The LD_{50} is generally reported as mg of toxicant per kg of animal body weight. Oral rat data are frequently reported and used most often in the MEGs models, although other route/species combinations are substituted if oral rat data are unavailable. The lowest published lethal dose is substituted in the absence of more statistically reliable lethal dose data.

Adjusted Ordering Numbers used in the MEGs methodology are derived from the ordering numbers developed in the 1976 EPA report, *An Ordering of the NIOSH Suspected Carcinogens List Based Only on Data Contained in the List*.[6]

$$\text{Adj. ord. no.} = \frac{\text{Ordering number}}{\text{Lowest dosage to elicit oncogenic effects or teratogenic effects}}$$

Adjusted ordering numbers increase with carcinogenic (or teratogenic) potency and thereby serve as an index to rank chemicals that are potentially genotoxic. The numbers have no physical meaning since they are obtained using an arbitrary weighting system. They are used in MEGs because they allow ranking

TABLE 2. MEGs MODELS BASED ON HEALTH EFFECTS

Medium	Model number	MATE Model	Section in MEG's report	EPC Model	Section in MEG's report	Comments
Air ($\mu g/m^3$)	AHS	Regulations for radioactive materials released in air to unrestricted areas (converted to $\mu g/m^3$)	See Uranium, page E-434	Lowest ambient standard or criterion for air based on health effects ($\mu g/m^3$)	5.1.1	Federal guidelines for ambient air based on human health effects include Primary Ambient Air Quality Standards (40 CFR, Part 50); National Emissions Standards for Hazardous Air Pollutants (40 CFR, Part 51). Regulations for Protection Against Radiation (40 CFR, Part 20) limit releases of radioactive materials in air to unrestricted areas.
	AH1	10^3 x TLV or NIOSH recommendation (mg/m^3)	6.1.1 (eq. 39)	$\frac{10^3}{420}$ x TLV or NIOSH recommendation (mg/m^3)	5.2.1.1.1 (eq. 3)	Lower value is used when both TLV and NIOSH recommendations are available. A value of 5,000 ppm is used in place of TLV for simple asphyxiants. Genotoxic effects are not reflected.
	AH2	45 x LD_{50} (mg/kg)	6.1.1 (eq. 42)	0.107 x LD_{50} (mg/kg)	5.2.1.1.2 (eq. 8)	Used only in the absence of AH1. LD_{50}(oral, rat) is used when available. Other lethal dose values are substituted when LD_{50}(oral, rat) is not available. Genotoxic effects are not considered.
	AH3	0.1 x Lowest lethal or toxic concentration reported ($\mu g/m^3$)	6.1.1 (eq. 44)	0.081 x LD_{50} (mg/kg)	5.2.1.1.3 (eq. 10)	Used only in the absence of AH1. LD_{50}(oral, rat) is used when available. Other lethal dose values are substituted when LD_{50}(oral, rat) is not available. Lowest reported human or mammalian lethal or toxic concentration data are used. Genotoxic effects are not considered.
	AC1	10^3 x TLV or NIOSH recommendation recognizing carcinogenic potential (mg/m^3)	6.1.1 (eq. 41)	$\frac{10^3}{420}$ x TLV or NIOSH recommendation. (mg/m^3)	5.3.1.1 (eq. 30)	MEG_{AC1} values reflect carcinogenic potential as well as other types of health effects.
	AC2	$7 \times 10^4 \div$ Adjusted* ordering number based on carcinogenic potential.	6.1.1 (eq. 45)	$\frac{10^3}{6} \div$ Adjusted* ordering number based on carcinogenic potential.	5.3.1.2 (eq. 33)	Adjusted ordering numbers increase with carcinogenic potential. Health effects other than oncogenic effects are not reflected.
	AT	$7 \times 10^4 \div$ Adjusted* ordering number based on teratogenic potential.	6.1.1 (eq. 45)	$\frac{10^3}{6} \div$ Adjusted* ordering number based on teratogenic potential.	5.3.1.3 (eq. 34)	Adjusted ordering numbers increase with teratogenic potential. Health effects other than teratogenic effects are not reflected.

*An equivalent expression for this model is:

M x Lowest dosage (mg/kg) associated with an oncogenic or teratogenic response, where M is a variable multiplier dependent on extent of positive tests. For MATE, M ranges from 33 to 8.8. For EPC, M ranges from 0.08 to 0.002.

TABLE 2. (Continued)

Medium	Model number	MATE Model	Section in MEG's report	EPC Model	Section in MEG's report	Comments
Water (μg/ℓ)	WHS	5 x Lowest drinking water standard or criterion (μg/ℓ)	6.1.3 (eq. 47)	Most stringent drinking water standard or criterion (μg/ℓ)	5.1.2	Federal guidelines for contaminant levels in drinking water are specified in the following: National Primary Drinking Water Regulations; EPA 1976 Water Quality Criteria; NAS/NAE 1972 Water Quality Criteria.
	WH1	15 x $MATE_{AH1,2,or\ 3}$ (μg/m^3)	6.1.3 (eq. 48)	15 x $EPC_{AH1,2,or\ 3}$ (μg/m^3)	5.2.2.1.1 (eq. 13)	Most stringent MEG value for air is used. Genotoxic effects are not considered.
	WH2			13.8 x TLV or NIOSH recommendation (mg/m^3) or 0.4 x LD_{50} (mg/kg)	5.2.2.1.2 (eq. 16) (eq. 17)	Model involving LD_{50} is used only if TLV or NIOSH recommendation is not available. LD_{50} (oral, rat) is used where available. Other lethal dose values are substituted when LD_{50} (oral, rat) is not available. Genotoxic effects are not considered.
	WC	15 x $MATE_{AC1\ or\ 2}$ (μg/m^3)	6.1.3 (eq. 48)	15 x $EPC_{AC1\ or\ 2}$ (μg/m^3)	5.3.2.1 (eq. 35)	More stringent EPC_{AC} is used.
	WT	15 x $MATE_{AT}$ (μg/m^3)	6.1.3 (eq. 48)	15 x EPC_{AT} (μg/m^3)	5.3.2.2 (eq. 36)	
Land (μg/g)	LH1	0.2 x $MATE_{WH}$ (μg/ℓ)	6.1.5 (eq. 51)	0.2 x Most stringent EPC_{WH} (μg/ℓ)	5.2.3.1.1 (eq. 23 modified)	ORIGINAL LAND MODEL HAS BEEN MODIFIED. EQUATIONS GIVEN HERE REPRESENT ORIGINAL LAND MODEL MULTIPLIED BY 100.
	LC	0.2 x $MATE_{WC}$ (μg/ℓ)	6.1.5 (eq. 51)	0.2 x EPC_{WC} (μg/ℓ)	5.3.3.1 (eq. 37 modified)	
	LT	0.2 x $MATE_{WT}$ (μg/ℓ)	6.1.5 (eq. 51)	0.2 x EPC_{WT} (μg/ℓ)	5.3.3.2 (eq. 38 modified)	

Subscript Key: A (air); W (water); L (land); S (standards or criteria); H (health effects); C (carcinogenicity); T (teratogenicity); numbers refer to specific models.

TABLE 3. MEGs MODELS BASED ON ECOLOGICAL EFFECTS

Medium	Model number	MATE Model	Section in MEG's report	EPC Model	Section in MEG's report	Comments
Air ($\mu g/m^3$)	AES			Lowest ambient standard or criterion for air based on ecological effects ($\mu g/m^3$)	5.1.1	National Secondary Ambient Air Quality Standards (40 CFR, Part 50) are the only Federal guidelines for air based on ecological effects.
	AE	Lowest 24-hr concentration having an effect on vegetation	6.1.2 (eq. 46)	0.1 x Lowest 24-hr concentration having an effect on vegetation ($\mu g/m^3$)	5.2.1.2 (eq. 11)	Effective levels reported for exposures other than 24 hours are adjusted. Only common plant species indigenous to North America are considered.
Water ($\mu g/\ell$)	WES	5 x Most stringent criterion for water based on ecological effects ($\mu g/\ell$)	6.1.4 (eq. 49)	Most stringent criterion for water based on ecological effects ($\mu g/\ell$)	5.1.2	Federal guidelines for contaminant levels in water based on ecological effects are specified in the following: 1972 NAS/NAE Water Quality Criteria; 1976 EPA Quality Criteria for Water; and 1968 NTAC Water Quality Criteria. When MEG_{WES} is available, other MEG_{WE} values do not appear on MEG charts.
	WE1	0.1 x Lowest reported TLm ($\mu g/\ell$)	6.1.4 (eq. 50)	0.05 x Lowest reported TLm ($\mu g/\ell$)	5.2.2.2.1 (eq. 18)	TLm-96 is used most often. Value for most sensitive species (may be either marine or fresh-water) is used in calculations. MEG_{WE1} is not presented on MEG chart if MEG_{WE3} is available.
	WE2			Lowest concentration reported to cause tainting of fish flesh ($\mu g/\ell$)	5.2.2.2.2 (eq. 19)	MATE value based on tainting level is not specified because effect is reversible.
	WE3			Recommended application factor x Lowest reported TLm ($\mu g/\ell$) or 0.2 x Reported hazard level ($\mu g/\ell$)	5.2.2.2.3 (eq. 20) (eq. 21)	Specific application factors and hazard levels are taken from two recognized water quality documents: 1972 NAS/NAE Water Quality Criteria; and 1976 EPA Quality Criteria for Water. EPC_{WE3}, if available, supersedes EPC_{WE1}.
	WE4			Maximum allowable concentration in fish ($\mu g/kg$) ÷ Highest reported concentration factor	5.2.2.2.4 (eq. 22)	Maximum contaminant concentrations in fish are specified by the FDA.
Land ($\mu g/g$)	LE	0.2 x More stringent $MATE_{WH}$ ($\mu g/\ell$)	6.1.6 (eq. 52)	0.2 x Most stringent WE ($\mu g/\ell$)	5.2.3.2 (eq. 29 modified)	ORIGINAL LAND MODEL HAS BEEN MODIFIED. THESE EQUATIONS REPRESENT ORIGINAL LAND MODEL MULTIPLIED BY 100.

Subscript Key: A (air); W (water); L (land); S (standards or criteria); E (ecological effects); numbers refer to specific models.

of carcinogens and teratogens on the basis of information that is readily obtainable for a large number of chemicals. Adjusted ordering numbers are influenced primarily by (1) the lowest effective dosage reported, and (2) animal species giving positive tests. Adjusted ordering numbers for organic suspected carcinogens currently addressed by MEGs range from unity up to about three million. (See Section 4.3 for a discussion of adjusted ordering numbers for organic chemicals addressed in Reference 2.)

Carcinogenic Potential is indicated by the ability of a chemical to produce tumors in animals or man at a rate that is significant above background tumor incidence.

Teratogenic Potential pertains to the ability of a chemical to produce effects in the offspring after the pregnant female is exposed. Many chemicals that are teratogenic are also suspected carcinogens.

Threshold Limit Median (TLm) describes the lethal concentration of a pollutant to 50 percent of a tested aquatic species population. TLms are generally expressed in mg/L. Exposure durations may be 24, 48, or 96 hours; most frequently 96-hour values are reported. Values vary depending on species tested, the test type (i.e., static or flowthrough bioassay), and other conditions such as pH or water hardness. The TLm reported for the most sensitive species is used in the equations to derive MEGs.

Application Factor is the ratio between the safe and lethal concentration of a chemical. The factor is almost always within the range 0.1 to 0.01. If Tlm and application factor are established for a chemical, the safe concentration for a given species tested is easily calculated.

Safe level for aquatic species = Application factor x TLm

Tainting of Fish, evident as objectionable taste, odor, or color, may occur when the fish are exposed to certain chemicals. Generally, the effect is reversible if the fish are removed to clean water.

2.6 HAZARD POTENTIAL VALUES

Since available resources for chemical analysis are noninfinite, it is important that efforts be focused on chemicals that are potentially the most dangerous. Thus, a basic need in environmental assessment is a method for ranking chemicals on the basis of their potential environmental impact taking into consideration a wide variety of effects. To meet this need a systematic method was described in Volume I[1] for the calculation of Hazard Potential Values based on MEGs reflecting potential effects on human health. The equation used to derived these Hazard Potential Values is given below:

$$N = 2aa'A + 4bB$$

where N is the hazard potential value;
A is determined by the toxicity based EPC (health effects) for air; and
B is based on the "zero threshold" EPC for air. ("Zero threshold" chemicals include potential carcinogens and teratogens.)

a, a', and b are weighting factors.
Values assigned are as follows:

a = 1 if genotoxic properties are indicated (i.e., B is available).
a = 2 if genotoxic poperties are not indicated (B missing).
a'= 1.25 if cumulative or chronic effects are indicated.
a'= 1.0 if only acute effects are documented.
b = 1 if toxic potential data are available (A is available).
b = 1.5 if toxic potential data are unavailable (A missing).

The assignments of values for A and B are indicated in Table 3.

TABLE 4. ASSIGNMENT OF VALUES TO DERIVE HAZARD POTENTIAL VALUES

Toxicity based EPC ($\mu g/m^3$)	Corresponding value of A	Zero threshold EPC ($\mu g/m^3$)	Corresponding value of B
>200	1	>20	1
≤200	2	≤20	2
≤ 40	3	≤ 2	3
≤ 2	4	≤ 0.2	4
≤ 0.02	5	≤ 0.02	5

Updated Hazard Potential Values calculated for organic MEG compounds are given in Appendix E of this volume. This listing supersedes the numbers given for organics in Appendix D of Volume I.

The compounds receiving the highest Hazard Potential Values (in the equation above) have been assigned hazard indicators which appear in the upper right-hand corner of the MEG charts in Volumes II, III and IV. XXX denotes the compounds of greatest concern (Hazard Potential Values ≧ 25); XX indicates the next highest level of concern (Hazard Potential Value 19 to 25), and X denotes moderate concern (Hazard Potential Value 13 to 19). A total of 68 organic compounds are assigned indicators.

SECTION 3

MODIFICATIONS TO THE ORIGINAL MEGs METHODOLOGY

The system introduced in Reference 1 for calculating and presenting MEGs has been applied in Volumes III and IV and in this volume. A few minor modifications in the methodology have been adopted. These changes are: 1) ID numbers have been assigned to each MEG compound and now serve as a means for ordering the chemicals in various listings; 2) one MEG category, Category 26, formerly Organometallics, has been changed to address Organophosphorus Compounds; 3) the land model for calculating EPCs and MATEs has been altered; 4) in an effort to supply reasonable goals for as many compounds as possible, in some cases analogies between similar compounds are drawn and data extrapolated to yield MEGs for compounds otherwise without quantitative goals (this is done only for certain categories and only when there is clear evidence that the analogy is warranted; 5) the system for handling references in the background information summaries has been improved.

The subsections that follow address each of these changes as well as other less significant refinements.

3.1 IDENTIFICATION NUMBERS

Six-digit identification numbers have been assigned to each organic MEG compound. These ID numbers indicate the category, subcategory, and position within the subcategory for any chemical. Thus, structurally similar compounds will be assigned similar numbers. The association of structurally similar compounds is a powerful tool in environmental assessment, especially in the absence of complete profile data for many substances. The use of MEG ID numbers augments the association of data for related chemicals. The method for assignment of the 6-cipher numbers is illustrated in Figure 3.

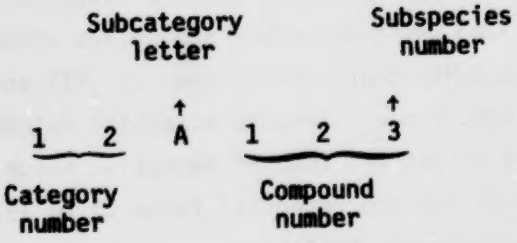


Figure 3. Assignment of MEG identification numbers

The information contained in each of the six digits in the organic MEG compound identification numbers are explained below:

Category Number

The first two digits (reading from left to right) of the ID number indicate the MEGs category number. A total of 26 organic categories are defined. (See Appendix B this volume.) These categories are established to group together compounds with certain functional groups (e.g., Alcohols-Category 5, Amines-Category 10) or that are structurally similar (e.g., Benzene and Substituted Benzene Hydrocarbons-Category 15).

Subcategory

The third digit of the ID number indicates the subcategory to which the compound belongs. Each category is divided into two or more subcategories designated A, B, C... in an effort to associate compounds of a homologous series or that are otherwise related structurally. For example, aromatic and aliphatic compounds with a common functional group may comprise separate subcategories within a functional group category. The degree of substitution on a hydrocarbon chain or on a benzene ring distinguishes the subcategories of certain groups.

Compound Number

The last three digits of the ID number comprise the compound number. Compounds of each subcategory are arranged in increasing order of complexity, and compound numbers are assigned to reflect the position of a given compound relative to others within a subcategory. The numbers 020, 040, 060...980 are used, the first compound (i.e., the simplest or lowest molecular weight compound) of any subcategory being assigned the lowest number. (The odd decades, 010, 030, 050... are generally reserved for substances that may need to be added to the MEGs list at a later date. Only a few of these numbers are currently used.)

Subspecies Number

The last digit of the ID number (if a nonzero number) indicates the subspecies number. Subspecies arise when two or more compounds are addressed collectively in a single background information summary and MEG chart. Subspecies are specific compounds that are closely related and that can be classified with a parent structure, i.e., the substance whose name appears on the MEG chart. The identification number for each subspecies will be the same as the number for the parent chemical, except that the last digit of the compound number will be a nonzero integer. Subspecies numbers reflect increasing complexity among the compounds listed under a give parent structure. The ID numbers assigned to the pentanes illustrate the subspecies concept. Pentanes are included in the MEGs master list in Category 1 (Aliphatic Hydrocarbons), Subcategory A (Alkanes and Cyclic Alkanes). The ID numbers are listed below.

Pentanes	01A100
n-Pentane	01A101
Isopentane	01A102
Neopentane	01A103

Data pertaining to the pentanes are presented on a single background information summary entitled PENTANES. One MEG chart is supplied, and the MEG values shown may be applied to an individual subspecies, or to the group collectively.

The system for assigning the ID numbers has been designed to allow for expansion of the MEGs master list. New chemicals may be introduced at almost any location within any subcategory. Also, up to nine subspecies may be listed with each parent compound.

A related system for assigning MEG ID numbers for inorganics is also proposed for use in subsequent MEGs volumes. For inorganics each parent element is assigned a category number. The remaining digits of the number indicate the elements combined with the parent element to comprise a specific chemical

3.2 THE REVISED LIST OF ORGANICS

The only major change in the MEGs master list of organic compounds involves Category 26, originally Organometallics. All the compounds previously in this category have been reassigned to the category of the parent element. Alkyl mercury, for example, is no longer listed in Category 26 but in Category 83 with other mercury compounds of environmental importance. In the revised master list, Category 26 is comprised of organophosphorus compounds. This class of compounds was not included in the original master list.

The MEGs master list as presented in Volume I has been revised to correct errors and to better organize the original list of compounds. Certain of the original MEGs categories have been resolved into subcategories to describe more clearly the compounds included. A few new compounds were added to the list because of their designation as Priority Pollutants in the Consent Decree. All compounds that are moved to a different category or added to the MEGs master list since November 1977 are indicated in Table 5. The revised master list of organics is given in Appendix C, this volume.

All the changes in the MEGs master list have been made in an effort to group together structurally and toxicologically similar compounds and to improve specificity within subcategories.

3.3 LEACHING MODEL REVISION

One of the conclusions mentioned in Volume I of the MEGs report is that the EPCs and MATE values specified for land or solid waste, respectively, appear too stringent. Natural background levels, available for a few compounds, were likely to be higher than the model derived EPC. To remedy this problem the original model to generate land or solid waste MEGs has been revised to incorporate a dilution factor. The rationale behind the change follows.

The original leaching model used for relating acceptable levels of contaminants in water to goals in soil or in solid waste incorporated the assumptions that 1) all contaminants in 1 kg of soil (or solid waste for MATE model) would be leached by 2 liters of water; and 2) the resulting concentration of the contaminant in the leachate should not exceed the value of the water EPC (or MATE value if leachate is from solid waste).

The equations for the models introduced in Volume I are given below. The subscripts indicate land (L), water (W), health (H), and ecology (E). EPCs and MATEs for solid waste are in μg/g, and values for water are in μg/L.

$$\mathrm{EPC}_{LH} = 0.002 \times \mathrm{EPC}_{WH}$$
$$\mathrm{EPC}_{LE} = 0.002 \times \mathrm{EPC}_{WE}$$
$$\mathrm{MATE}_{LH} = 0.002 \times \mathrm{MATE}_{WH}$$
$$\mathrm{MATE}_{LE} = 0.002 \times \mathrm{MATE}_{WE}$$

The original model thus assumes that man and aquatic organisms may be exposed to the concentrated leachate, a questionable assumption. In actuality, the only way leachate from solid waste will affect human life or aquatic life is by contaminating existing water supplies or habitats which may be assumed to be pure, or at least contaminated to a lesser degree than the leachate itself. Hence, a dilution factor is needed in the model.

TABLE 5. CHEMICALS ADDED, DELETED, OR MOVED IN ORGANICS MASTER LIST

Category	Chemicals added	Chemicals deleted
1	n-Dodecane	
	Dicyclopentadiene[a]	
2	Ethyl chloride	
	Trichloroethylene	
	1,1-Dichloro-2,2-difluoroethylene	1,2-Dichloro-1,2-difluoroethane
	1,1,2,2-Tetrachloroethane	
3	Tetrahydrofuran[b]	
	2-Ethyl-4-methyl-1,3-dioxolane	2-Ethyl-4-methyl-1,2-dioxolane
4	Epichlorhydrin[c]	
	2-Chloroethyl vinyl ether	
	4-Chlorophenyl phenyl ether	
	2,2'-Dichloro-diisopropyl ether	bis-(1-Chloroisopropyl)ether
5	Phenethyl alcohol	
6		1-Chloro-2,3-epoxypropane[c]
8	Valeric acid	
	Oleic acid	
	Adipic acid	
	α-Butyrolactone	
	Methyl acetate	
	Ethyl acetate	
	Ethyl acrylate	
	Propyl acetates	
	Butyl acetates	
	Amyl acetates	
		Long chain esters
15		Indene[e]
	Butylbenzyl phthalate	
18	Ethyl cresols	Alkyl cresols
19	2,4,6-Trichlorophenol	
21	3-Methylcholanthrene[d]	
22	Indene[e]	
		Dicyclopentadiene[a]
		Benzo(e)fluoranthene
		Methylcholanthrene[d]
24	Methylbenzofurans	Methyldibenzofurans
		Tetrahydrofuran[b]

[a] Moved from Category 22 to Category 1

[b] Moved from Category 24 to Category 3

[c] Moved from Category 6 to Category 4 (now listed as epichlorhydrin)

[d] Moved from Category 22 to Category 21

[e] Moved from Category 15 to Category 22

For the revised MEG land model, an arbitrary dilution factor of 100 is incorporated in the model described above. The revision implies that any leachate will be diluted by a factor of 100 upon entering a body of water that supports aquatic life or that might be used for human consumption. This means that the contaminant concentrations in the undiluted leachate (a volume mass equal to twice the mass of the solid material) may be 100 times the acceptable level of the contaminant in the body of water. An alternate interpretation of the model could involve a larger volume of leachate to effect complete extraction of toxic materials. Subsequent dilution other than 1:100 would be assumed in this case. The ultimate dispersal of leached toxicant in water of mass 200 times that of the initial solid material results in either interpretation.

The revised model is still conservative, but it is more consistent with a real leaching/ dilution/ exposure scenario. The revised equations are as follows:

$$EPC_{LH} = 0.2 \times EPC_{WH}$$
$$EPC_{LE} = 0.2 \times EPC_{WE}$$
$$MATE_{LH} = 0.2 \times MATE_{WH}$$
$$MATE_{LE} = 0.2 \times MATE_{WE}$$

3.4 ASSIGNMENT OF EPCs AND MATE VALUES IN THE ABSENCE OF EMPIRICAL DATA

In order to calculate MEGs for a compound, the original methodology required certain empirical data such as TLV® or LD_{50} for the compound. If such data were unavailable, MEG values were not specified. In Volumes III and IV an effort has been made to include as many values on the MEG charts as possible including, for certain categories, values derived by analogy with similar structures. The reasoning behind this attempt to assign additional MEGs is that it permits more extensive coverage for preliminary environmental assessment efforts. All MEG values based on surrogate data are derived very cautiously and are carefully documented.

By grouping similar compounds into categories and subcategories, many patterns relating to toxicity have become apparent. For certain homologous series, for example, prediction of toxic potential for an undocumented compound is feasible on the basis of data from other members of the series. For certain compounds for which toxicological data are unavailable, MEGs are specified in Volumes III and IV on the basis of information for related compounds. If there is evidence that extrapolation of data from structurally related compounds is not appropriate (in the polycyclics, for example), then this approach is not used. For all cases in which surrogate data serve as the basis for MEG values, the specific rationale behind the extrapolation is indicated in the background information summary. Surrogate values are also indicated on the MEG charts.

3.5 INFORMATION SUMMARY REFERENCES

The system used to reference information items contained in the background information summaries in Volumes III and IV differs from the system for references used in Volume II. In the 1979 report, references are compiled independently for each subcategory, and the reference list is supplied following all the background information summaries and MEG charts for the subcategory.

This new system allows the user to ascertain quickly if a given reference has been used in preparation of the summaries for a subcategory. If a significant reference is overlooked, it should be brought to the attention of the EPA project officer so that future updates can take advantage of the new source of information.

3.6 CANDIDATE LIST

A candidate list of organic compounds to be addressed by MEGs in the future has been compiled. This list is presented in Appendix C following the master list of organics.

In the candidate list, an effort has been made to assign chemicals to the appropriate MEGs category. The list includes several types of compounds that were not previously addressed by MEGs, and tentative category assignments were made. The strategy for these assignments is summarized in the statements that follow:

1. Candidate compounds are assigned to the MEGs category which most closely describes the chemical structurally.

2. Where more than one functional group is present in a structure, the compound is assigned to a category on the basis of the most reactive functional group. Prediction of the most reactive group is often difficult and may involve a "best guess."

3. For multifunctional compounds, assignment to a MEGs category may involve consideration of applicable, analytical techniques. For example, solvent extraction of complex effluents results in a series of fractions that may be described as acid, basic, or neutral. Compounds that elute in these

fractions are influenced by functional groups, molecular weight, configuration, aromaticity, etc. The fraction in which a compound is expected to elute is considered in making the the category assignment. Again a "best guess" is frequently involved.

4. Peroxides are grouped with glycols and epoxides in Category 6.

5. A large number of alcohols with ether functions (methoxy, ethoxy, etc.) are included with alcohols in Category 5.

6. Compounds with both hydroxy and keto functions are included with aldehydes and ketones in Category 7.

7. Aliphatic nitro compounds are added in Category 9.

8. Phenolic compounds with ether functions (methoxy, ethoxy, etc.) are included with phenols in Category 18.

3.7 GRAPHICAL SUMMARIES OF MEGs BY CATEGORY

Appendix G of this report presents graphical summaries by subcategory of the EPCs and MATEs for all organic chemicals addressed in MEGs Volumes III and IV. The graphs show the ranges in the MEG values based on health and based on ecology for compounds in each subcategory. The point values for specific chemicals are indicated. Ecology based values may be readily compared with health based values on the graphs. Goals based on carcinogenic potential are flagged so that subcategories with a number of chemicals classified as suspected carcinogens are evident. The summaries are very useful for comparing relative toxicities of the various MEGs categories.

SECTION 4
ORGANIC MEGs--CONCLUSIONS

Background information summaries and MEG charts for organic compounds are presented in Reference 2. Conclusions regarding the MEGs for these compounds considered collectively are discussed in this section.

4.1 EXTENT OF COVERAGE AND DATA GAPS

To date 319 background information summaries and MEG charts have been prepared addressing a total of 586 organic chemicals. Of the 319 MEG charts, 48 remain without calculated MEG values because of inadequate information. For these chemicals, it was deemed inappropriate to rely on information pertinent to related compounds. Natural background levels are indicated on 12 of the charts otherwise without MEG values. The natural background at least indicates a lower limit that can be used as a control goal.

Table 6 gives a summary by category of the types of MEG specified for the organic compounds. It is evident from this summary that while it is possible to estimate MEGs for many compounds major data gaps exist for chemicals in several categories. Of particular significance to synfuels assessments are the data gaps in Categories 21, 22, and 24 addressing polycyclics. Ecology data for these chemicals are very sparse.

More than 85 percent of the organic chemicals addressed in background information summaries are assigned MEGs for air and water based on health effects. These MEGs reflect either acute or chronic toxicity, or they may be based on oncogenic or teratogenic properties. Although long term carcinogenicity studies in animals have been performed for many polycyclic compounds, acute animal toxicity data is reported for only a few of these structures. There is virtually no human toxicity data for these chemicals, and no correlations are established between carcinogenic potential and acute toxicity. For chemicals not shown to be active tumor promoters or carcinogens, it is possible that low MEG values are warranted on the basis of acute toxic properties, but the required data to support acute toxicity MEGs are seldom reported from the carcinogenicity studies.

Empirical data to calculate MEGs for air based on ecological effects are available for relatively few organic chemicals. Only 28 charts list ecology based air MEGs, and almost all of these are for aliphatic hydrocarbons. Of

TABLE 6. CATEGORIZED DISTRIBUTION OF ORGANICS ADDRESSED BY MEGs AND TYPES OF MEGs SPECIFIED

Category	Number of substances addressed	Number of MEGs specified								
		Air			Water			Land (or solid waste)		
		Health	Ecology	Natural background	Health	Ecology	Natural background	Health	Ecology	Natural background
1	51	51	22	36	51	29	0	35	22	0
2	42	41	0	7	41	27	8	37	23	1
3	6	6	0	0	6	2	0	6	2	0
4	17	12	0	0	12	6	1	12	6	0
5	23	23	0	5	23	14	6	23	14	0
6	3	3	0	0	3	2	0	3	2	0
7	31	16	2	5	16	10	8	15	9	0
8	48	47	0	0	47	26	8	47	26	0
9	9	9	0	0	9	5	0	9	5	0
10	40	40	0	1	40	17	6	40	15	0
11	6	6	1	0	6	0	0	6	0	0
12	7	7	0	0	7	0	0	7	0	0
13	13	11	0	9	11	0	7	9	0	0
14	6	6	0	0	6	0	0	6	0	0
15	33	33	3	12	33	20	20	33	20	0
16	21	21	0	0	21	16	6	21	16	0
17	16	16	0	0	16	12	0	16	12	0
18	41	33	0	0	33	33	0	33	33	0
19	7	7	0	0	7	7	2	7	7	0
20	11	11	0	0	11	11	0	11	11	0
21	53	36	0	28	36	1	4	36	1	3
22	13	8	0	5	8	0	1	8	0	1
23	57	54	0	8	54	11	0	54	11	1
24	13	1	0	0	1	0	0	1	0	0
25	14	9	0	0	9	0	0	9	0	0
26	5	5	0	0	5	1	0	5	1	0
	586	512	28	116	512	250	77	489	239	5

these values, only the ones for ethylene are substantially lower than the corresponding MEGs reflecting health or genotoxic effects. In spite of the apparent tendency for health based MEGs to be more stringent, the lack of available vegetation effects data points up a need for further research. Effects of air pollutants on vegetation are not predictable on the basis of chemical structure. Thus research projects to secure effects data for a broad range of chemicals on various sensitive species will be required before substantial numbers of ecology based air MEGs can be supplied. The MEGs models prescribed in the current methodology to calculate EPCs and MATEs from the lowest effective concentration are probably adequate for use with the existing data base. Necessary data for complex models are not available for a large number of chemicals. There is little standardization in the literature for reporting effects of chemicals on vegetation.

Aquatic toxicity data are available for approximately 40 percent of the organics addressed. For several categories, however, there are no data to indicate aquatic toxicity. Azo compounds (Category 11) and nitrosamines (Category 12) comprise two important categories for which aquatic toxicity has not been characterized.

Natural background concentrations are unavailable for many organic chemical categories. As indicated in Table 6, more air values than water values are supplied. Levels of organics in soils are not documented except for a very few chemicals.

Tables 7 through 10 list MEG ID numbers for compounds according to their EPC values. Given in each column on the tables are the ID numbers for compounds assigned EPCs within the range indicated. Health based air and water values are addressed in Tables 7 and 8, respectively. Ecology based values for air and water are shown in Tables 9 and 10, respectively. Land values based on health and based on ecology are derived directly from water data except that land values for gases are not calculated.

4.2 VERSATILITY PROVIDED BY PRESENTATION FORMATS

The several formats for presentation of MEGs data were selected in an effort to produce a document that would be useful for data analysis in environmental assessment. In addition to the single page background information summaries and MEG charts, several listings are compiled, each supplying a different level of information. The referenced one-page background infor-

TABLE 7. AIR HEALTH EPC VALUES FOR ORGANICS

EPC VALUES, $\mu g/m^3$

	0.01	0.1	1	10	100	10^3	10^4	10^5
04B020 16A220 21B060, 21B080 21C080, 21C100	11B060 21D040	02B140 07A080 08B080 10B020 10C040, 10C180, 10C220 10C180 11A020 11B020, 11B040 12A020, 12A040 20A120 20B020, 20B040 21B040, 21B100 23B100, 23B220, 23B240 23C180 26B040	02A060, 02A100, 02A300 02B020, 02B120 03B020, 03B040 04A020, 04A040, 04A050, 04A080 07A020 08A140 08C080 09A120 10A110 10C080, 10C120, 10C140, 10C200 11A040 12A080 12B020 13A020, 13A040, 13A080, 13A100, 13A140 14B020 15A020, 15A180 15B080 17A080, 17A020 17B040, 17B060 18B060 19A060 20A080, 20A100 21A180 21B120, 21B140 21C120, 21C160 21D020, 21D060 22C020, 22C080 22D020 23C020 23D020, 23D040 25A020 26B020	01B220 02A100, 02A120, 02A140, 02A160, 02A240, 02A260, 02A300 02A320 02B060, 02B100 04A120, 04A140, 04A180, 04A200 04B040, 04B080, 04B100 05A140 05B100 05C040 06A020 07A080 07B080, 07B100, 07B120 07C020 08A020, 08A040, 08A060, 08A080, 08A100, 08A120 08B020, 08B040, 08B080, 08B100 08C020 08D080, 08D280, 08D300 09A020, 09A040, 09A060, 09A080, 09A100 09B020, 09B040 10A020, 10A040, 10A060, 10A080, 10A100, 10A120, 10A140, 10A160 10B040, 10B080 10C020, 10C060 10D020 11B080 12A080 12B040 13B020 14A020 15B160 16A180 16B020, 16B040 17A020, 17A040 18A020, 18A040, 18A060, 18A080, 18A100, 18A120, 18A140, 18A160 18B020, 18B080 19A020, 19A040 19A050 19B020 20A040, 20A060 21C040, 21C080 22C040, 22C060 23A020, 23A040, 23A100, 23A140 23B020, 23B040, 23B080, 23B200, 23B280 23C040, 23C060, 23C080, 23C100, 23C120, 23C140, 23C180 25A040, 25A060, 25A080 25B040 26A020	01A100 01A120 01A140, 01A160, 01A180, 01A200 01B100, 01B120, 01B140, 01B160, 01B180, 01B200 02A020, 02A040, 02A080, 02A200, 02A340, 02A360 03A040 03B060 05A020, 05A080, 05A100, 05A120, 05A160 05B080, 05B100, 05B120, 05B140 05C020, 05C060 06B020 07A040, 07A100, 07A120, 07A140 07B180 08A100, 08A180, 08A200 08D080, 08D180, 08D200, 08D240, 08D260, 08D320 10B080, 10B100 10C180 12A100 13A080 13B040, 13B060, 13B080 14A040 15A040, 15A080, 15A100, 15A120, 15A140 15B020, 15B120, 15B140, 15B180, 15B200 16A020, 16A080, 16A100 16A120 16A180, 16A200 17B020 18A180 18B040 18C020, 18C040, 18C080 20A020 21A020, 21A040, 21A080, 21A140 21B100 22A010 22B040, 22B080 23A060, 23A080, 23A120 23B080, 23B120, 23B140, 23B160	01A020, 01A060, 01A220, 01A240, 01A260 01B080 01C020, 01C040, 01C080 02A250 02A280 02B040, 02B070, 02B080 03A020, 03A060 05A040, 05A060 05B020, 05B040 06A040 07B020, 07B060 08C040 08D020, 08D040, 08D100, 08D120, 08D140, 08D220 15A060 15B080, 15B100 16A040, 16A060, 16A140	01A040, 01A080 01B020, 01B040, 01B060 02A200, 02A220	

10^6

TABLE 8. **WATER HEALTH EPC VALUES FOR ORGANICS**

EPC VALUES, μg/l

0.01 0.1 1 10 100 10^3 10^4 10^5 10^6

16A220 21B080 21C080 21C100		04B020 18A020, 18A040, 18A060, 18A080, 18A100, 18A120, 18A140, 18A160, 18A180 18B020, 18B040, 18B060, 18B080 18C020, 18C040, 18C060 19A020, 19A040, 19A050 19A080 19B020 20A020, 20A040, 20A060, 20A080, 20A100, 20A120 20B020, 20B040 21B080	02A380 02B140 07A060 10C040, 10C080, 10C100, 10C180, 10C220 11A020 11B020, 11B040, 11B060 12A020, 12A040 13A100 21B040 21B180 21D040 23B100, 23B220, 23B240 23C180 20B040	02A060, 02A160, 02A180 02A300 02B020, 02B100, 02B120 03B020, 03B040 04A040, 04A050, 04A060 04A120 04A140 04B100 07A020 08A100, 08A120, 08A140 08B060 08C080 08D280, 08D300 09A040, 09A120 10A080, 10A100, 10A110 10B020 10C120, 10C140, 10C200 11A040 12A060 12B020 13A020, 13A040, 13A080, 13A140 14B020 15A180 15B080 16B020, 16B040 17A020, 17A060, 17A080 17B040, 17B080 21A180 21B120, 21B140 21C180 21D080 22C020, 22C080 22D020 23A100 23C020 23D020, 23D040 25A020 28B020	01B220 02A020, 02A100, 02A120, 02A140, 02A240, 02A260 02A290 02A320 02A380 02B060 04A180, 04A200 04B040, 04B080 05A140, 05A180 05B100, 05B120, 05B140 05C040 06A020 07A080, 07A100, 07A140 07B080, 07B100, 07B120, 07B180 07C020 08A020, 08A040, 08A060, 08A080 08B020, 08B040, 08B080 08B100 08C020 08D080, 08D180, 08D200 09A020, 09A060, 09A080, 09A100 09B020, 09B040 10A020, 10A040, 10A080, 10A120, 10A140, 10A160 10B040, 10B080, 10B100 10C020, 10C060 10D020 11B080 12A080, 12A100 12B040 13A060 13B020, 13B040, 13B060, 13B080 14A020 15A020, 15A140 15B160 16A180, 16A200 17A040 21A020 21C040, 21C080, 21C120 21D020 22A010 22B040 22C040 22C080 23A020, 23A040, 23A060, 23A080, 23A120, 23A140 23B020, 23B040, 23B060, 23B080, 23B120, 23B140 23B180, 23B206, 23B200 23C040, 23C060, 23C086, 23C100, 23C120, 23C140, 23C180 25A040, 25A060, 25A080 25B040 26A020	01A100, 01A120, 01A140 01A160, 01A180, 01A200 01B100, 01B120, 01B140 01B160, 01B180, 01B200 02A040, 02A080, 02A200, 02A340 02B070, 02B080 03A040, 03A080 03B080 05A020, 05A060, 05A080, 05A100, 05A120 05B040, 05B060, 05B080 05C020, 05C080 06A040 06B020 07A040, 07A120 07B020, 07B060 08A160, 08A180, 08A200 08D020, 08D060, 08D120 08D140, 08D220, 08D240, 08D280 08D320 10B080 10C160 14A040 15A040, 15A060, 15A080, 15A100, 15A120 15B020, 15B080, 15B100, 15B120, 15B140, 15B180 15B200 16A020, 16A040, 16A060, 16A080 16A100, 16A120, 16A140, 16A180 17B020 21A040, 21A080, 21A140 21B180 22B080	01A020, 01A040, 01A060 01A220, 01A240, 01A260 01B020, 01B060 01C020, 01C040, 01C060 02A200, 02A220 02A260 02B040 03A020 05A040 05B020 08C040 08D040, 08D100	01A080 01B040, 01B080

TABLE 9. AIR ECOLOGY EPC VALUES FOR ORGANICS

EPC VALUES, μg/m³

	0.01	0.1	1	10	100	10^3	10^4	10^5	10^6
	01B020		07A060	01B140 07A020 15A020	01B100 15A040, 15A120	11B040	01B040 01C020	01A020 01B060	01A040, 01A060, 01A080 01B080

TABLE 10. WATER ECOLOGY EPC VALUES FOR ORGANICS

EPC VALUES, μg/l

	0.01	0.1	1	10	100	10^3	10^4	10^5	10^6
02A380 16A220	19A020 19A050	08D200 18A080 19A040	19B020	01B220 07A060, 07A100 10C140, 10C200, 10C220 16A020, 16A040, 16A060, 16A080, 16A100, 16A120, 16A140, 16A160 16B020, 16B040 18A020, 18A040, 18A060, 18A100, 18A120, 18A140, 18A160, 18A180 18B020, 18B040, 18B060, 18B080 18C020, 18C040, 18C080 19A060 20A020, 20A040, 20A060, 20A080, 20A100, 20A120 20B020, 20B040 21A020 26B040	01A160, 01A180 01B080 02A100, 02A240, 02A280, 02A290 02A340 02B080, 02B100 04A040, 04A050 04A060 07A020, 07A120 07B120 08A040 08D120, 08D140 09A040 10A020, 10A040, 10A080, 10A100 10B040, 10B060, 10B080 10C020 13A040 15A020, 15A040, 15A060, 15A080, 15A100, 15A120 15B020 15B080, 15B100, 15B120 17A020, 17A040, 17A060 23B020, 23B040	01A200 01B020 02A060, 02A260 02B040, 02B060, 02B070 03A020 03B020 04A020 04B040, 04B060 05A060, 05A100, 05A120, 05A140 05B020 06A020 07A080 07B100 08A060, 08A100, 08A140, 08A180 08B060 08D020, 08D040, 08D060, 08D080, 08D100 09B020, 09B040 10A060, 10A180 16B100 16B200 17B040, 17B060 23A020, 23A060, 23A080, 23A120	01A020, 01A060 01A080, 01A120, 01A140, 01A160 01B040, 01B140, 01B200 02A020, 02A040, 02A200 02A250 02B020 05A020, 05A040, 05A080 05B040 05C020, 05C040 06A040 07B020, 07B060 08B080 08D320 09A020 10A140		

mation summaries supply the most detail. MEG charts display the more stringent MEG values resulting from calculations appearing on the background information summaries. Charts are especially useful for comparing MEG values of different types for a given chemical. They also indicate by the presence or absence of MEG values the extent of available information for a given compound. Tabulated MATE values facilitate comparison of the MEGs for different chemicals. Although the basis for each value is not indicated in the tabulations, and this has become a major criticism,[7] it is desirable to have the listing uncluttered for use with the source analysis model (SAM).[3] Users of the tabulated MATE values should be aware that the basis for each number can be determined from the background information summary for the chemical of interest.

Hazard potential values are tabulated to allow ranking among the various chemicals. Unlike the EPCs and MATEs, no physical meaning should be attached to the hazard potential values. They are for ranking chemicals only. As with the tabulated MATE values, the bases for the numbers cannot be ascertained from the listing of the numbers.

Graphical summaries of the MEG values provide another means for comparing environmental severity of different compounds. The graphical summaries allow comparison of ranges of values within a category and also facilitate intercategory comparisons.

Each format type is designed for a different application. Information has been extracted from the background information summaries to supply all the numbers in the various listings.

4.3 RANKING ORGANIC COMPOUNDS USING THE MEGs METHODOLOGY

As pointed out in Section 2.1, one consideration in developing the MEGs methodology was the need for a procedure to allow a "most toxic first" ordering among chemicals. The Hazard Potential Values were designed to meet this requirement.

A summary listing of the 68 organic substances receiving Hazard Indicators, X, XX, and XXX, follows the table of hazard potential values in Appendix E. Forty nine chemicals are assigned a single "X" rating, 13 are assigned "XX," and 6 are assigned "XXX." All of the six compounds receiving the highest hazard indicators are suspected carcinogens. One of these, 1,1-dichloromethyl ether, is designated a human carcinogen by the ACGIH. Five of the six compounds of highest concern are polycyclic organic hydrocarbons.

Adjusted ordering numbers serve as the basis for the MEG values for suspected carcinogens and teratogens. In general, these values may be used to rank the potency of suspected genotoxic chemicals. Because the adjusted ordering numbers are influenced so strongly by the lowest reported effective dose (almost always a dosage in a laboratory animal species), certain chemicals recognized to cause cancer in man are not assigned high adjusted ordering numbers since very low effective dosages are not documented. Evidence of human carcinogenicity should be considered in ranking chemicals but the absence of quantitative data frequently precludes this. The adjusted ordering numbers serve reasonably well for their intended purpose, but several exceptions must be acknowledged in the rankings based only on adjusted ordering numbers. Listed in Table 11 are the adjusted ordering numbers for organic suspected carcinogens and teratogens currently addressed by MEGs. It should be noted that MEG values for some of the chemicals in Table 11 are based on data other than adjusted ordering numbers (e.g., TLVs® or NIOSH recommendations).

4.4 PHASE I

This volume together with MEGs Volumes I through IV constitute Phase I of MEGs development. There exist many shortcomings in the methodology and in its application. Enough is accomplished in these volumes, however, to guide development of MEGs Phase II.

This concludes Phase I.

TABLE 11. SUSPECTED CARCINOGENS AND TERATOGENS AND THEIR ADJUSTED ORDERING NUMBERS

Category	Pollutant	Adjusted ordering number
2	Methyl iodide	82
	Chloroform	3
	Carbon tetrachloride	1
	Vinyl chloride	*
4	Chloromethyl methyl ether	24
	Epichlorhydrin	4
	1,1'-Dichloromethyl ether	147
	1,1'-Dichlorodiethyl ether	1
7	Formaldehyde	43
8	β-Propiolactone	221
	Methyl methacrylate	5
	Dibutyl phthalate	5
10	Ethyleneimine	211
	Aminotoluenes	638
	4-Aminobiphenyl	54
	Benzidine	4
	3,3'-Dichlorobenzidine	1
	4,4'-Methylene bis(2-chloroaniline)	2
	1-Aminonaphthalene	124
	2-Aminonaphthalene	424
11	Diazomethane	78
	p-Dimethylaminoazobenzene	35
	Monomethylhydrazine	32
	N,N'-Dimethylhydrazine	2,207
	1,2-Diphenylhydrazine	1
12	N-Nitrosodimethylamine	1,076
	N-Nitrosodiethylamine	577
	N-Nitrosodipropylamine	29
	N-Methyl-N-nitrosoaniline	54
	N-Nitrosodiphenylamine	4
14	Dimethyl sulfoxide	86
15	Benzene	*
16	Polychlorinated benzenes	6
	PCB's	4
	α-Chlorotoluene	2
17	4-Nitrobiphenyl	54
18	Phenylphenols	3
19	2,4-Dichlorophenol	10
21	Napthalene	1
	Anthracene	1
	Phenanthrene	44
	Benz(a)anthracene	1,562
	7-12-Dimethylbenz(a)anthracene	272,809
	3-Methylcholanthrene	18,683
	Benzo(c)phenanthrene and alkyl derivatives	312
	Chrysene	32
	Methyl chrysenes	39
	Benzo(g)chrysene	4
	Dibenz(a,c)anthracene	7
	Dibenz(a,h)anthracene	754,833
	Benzo(a)pyrene	3,314,500
	Benzo(e)pyrene	23
	Picene	28
	Dibenz(a,h)pyrene	19
	Dibenz(a,i)pyrene	1,612
	Dibenz(a,l)pyrene	65
22	Cyclopenta(def)phenanthrene	1
	Benzo(k)fluoranthene	43
	Benzo(j)fluoranthene	11
	Benzo(b)fluoranthene	78
	1,2:5,5-Dibenzofluorene	5
	Indeno(1,2,3-cd)pyrene	43
23	Benz(c)acridine	7
	Dibenz(a,j)acridine	284
	Dibenz(a,h)acridine	312
	Dibenz(c,h)acridine	3
	Indole	7
	Benzo(a)carbazole	4
	Dibenzo(a,i)carbazole	6
	Dibenzo(c,g)carbazole	679
	Dibenzo(a,g)carbazole	12

*Adjusted ordering number not applicable. This compound is associated with human cancer.

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APPENDIX B

MEG CATEGORIES FOR ORGANIC CHEMICALS

The list of organic chemical substances to be addressed by MEGs has been divided into 26 categories in an effort to organize the list and to facilitate its use. Each of the 26 categories is further divided into two or more subcategories, grouping together structurally and toxicologically similar compounds. A listing of the MEG categories and subcategories for organics is given in this appendix. Distinguishing features of the specified categories and the rationale for compound assignments to the categories are also discussed.

This listing of categories and subcategories and the category descriptions supersede the organic category titles and descriptions provided in Appendix A of the 1977 MEGs Report Volume I.*

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*Cleland, J. G., and G. L. Kingsbury. 1977. Multimedia Environmental Goals for Environmental Assessment, Volume I, EPA-600/7-77-136a.

LIST OF MEG CATEGORIES AND SUBCATEGORIES FOR ORGANIC CHEMICALS

Category 1: Aliphatic Hydrocarbons

A. Alkanes and Cyclic Alkanes
B. Alkenes, Cyclic Alkenes, and Dienes
C. Alkynes

Category 2: Alkyl Halides

A. Saturated Alkyl Halides
B. Unsaturated Alkyl Halides

Category 3: Ethers

A. Noncyclic Aliphatic or Aromatic Ethers
B. Cyclic Ethers

Category 4: Halogenated Ethers

A. Monohalogenated Ethers
B. Dihalogenated and Polyhalogenated Ethers

Category 5: Alcohols

A. Primary Alcohols
B. Secondary Alcohols
C. Tertiary Alcohols

Category 6: Glycols, Epoxides

A. Glycols
B. Epoxides

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LIST OF MEG CATEGORIES AND SUBCATEGORIES (Continued)

Category 7: Aldehydes, Ketones

A. Aldehydes

B. Ketones

C. Aldehydes and Ketones with Additional Functional Groups

Category 8: Carboxylic Acids and Derivatives

A. Carboxylic Acids

B. Carboxylic Acids with Additional Functional Groups

C. Amides

D. Esters

Category 9: Nitriles

A. Aliphatic Nitriles

B. Aromatic Nitriles

Category 10: Amines

A. Primary Aliphatic Amines and Diamines

B. Secondary Aliphatic Amines

C. Aromatic Amines and Diamines

D. Tertiary Amines (Alkyl, Aryl)

Category 11: Azo Compounds; Hydrazine Derivatives

A. Azo Compounds

B. Hydrazine Derivatives

Category 12: Nitrosamines

A. Aliphatic Nitrosamines

B. Aromatic Nitrosamines

Category 13: Thiols, Sulfides and Disulfides

A. Thiols

B. Sulfides, Disulfides

LIST OF MEG CATEGORIES AND SUBCATEGORIES (Continued)

Category 14: Sulfonic Acids, Sulfoxides

A. Sulfonic Acids
B. Sulfoxides

Category 15: Benzene, Substituted Benzene Hydrocarbons

A. Benzene and Monosubstituted Benzene Hydrocarbons
B. Disubstituted and Polysubstituted Benzene Hydrocarbons

Category 16: Halogenated Aromatic Compounds

A. Ring Substituted Aromatics
B. Aromatics With Halogenated Alkyl Side Chain

Category 17: Aromatic Nitro Compounds

A. Simple Aromatic Nitro Compounds
B. Aromatic Nitro Compound With Other Functional Groups

Category 18: Phenols

A. Monohydrics
B. Dihydrics, Polyhydrics
C. Fused Ring Hydroxy Compounds

Category 19: Halogenated Phenolic Compounds

A. Halophenols
B. Halogenated Cresols

Category 20: Nitrophenolic Compounds

A. Nitrophenols
B. Nitrocresols

LIST OF MEG CATEGORIES AND SUBCATEGORIES (Continued)

Category 21: Fused Polycyclic Hydrocarbons

A. Two- and Three-Ring Fused Polycyclic Hydrocarbons
B. Four Ring Fused Polycyclic Hydrocarbons
C. Five Ring Fused Polycyclic Hydrocarbons
D. Compounds With More Than Five Fused Rings

Category 22: Fused Non-Alternant Polycyclic Hydrocarbons

A. Two- and Three-Ring Fused Non-Alternant Polycyclic Hydrocarbons
B. Four Ring Fused Non-Alternant Polycyclic Hydrocarbons
C. Five Ring Fused Non-Alternant Polyclic Hydrocarbons
D. Compounds With More Than Five Fused Rings

Category 23: Heterocyclic Nitrogen Compounds

A. Pyridine and Substituted Pyridines
B. Fused Six-Membered Ring Heterocycles
C. Pyrrole and Fused Ring Derivatives of Pyrrole
D. Nitrogen Heterocycles Containing Additional Hetero Atoms

Category 24: Heterocyclic Oxygen Compounds

A. One- and Two-Ring Heterocyclic Oxygen Compounds
B. Three or More Ring Heterocyclic Oxygen Compounds

Category 25: Heterocyclic S Compounds

A. One Ring Heterocyclic S Compounds
B. Two or More Ring Heterocyclic S Compounds

Category 26: Organophosphorous Compounds

A. Aliphatic Organophosphorous Compounds
B. Aromatic Organophosphorous Compounds

DISTINGUISHING FEATURES OF THE MEG ORGANIC CATEGORIES AND RATIONALE FOR COMPOUND ASSIGNMENTS

CATEGORY 1: ALIPHATIC HYDROCARBONS

Aliphatic hydrocarbons are the simplest of the organic compounds. They contain only the elements carbon and hydrogen. With the exception of the lower molecular weight compounds, aliphatic hydrocarbons are insoluble in water.

Aliphatic hydrocarbons may be either open-chain compounds or cyclic compounds which resemble open-chain compounds. Their physical and chemical properties are influenced by molecular weight, skeletal structure (straight-chain, branched or cyclic), and the presence and location of double or triple bonds. Aliphatic hydrocarbons, as opposed to aromatic hydrocarbons, undergo free radical substitution reactions. Unsaturated aliphatic hydrocarbons, i.e., those with double or triple bonds, undergo additional reactions.

Category 1 is divided into three subcategories:

A. Alkanes and Cyclic Alkanes--These compounds have no double bonds. They are non-polar and relatively unreactive.

B. Alkenes, Cyclic Alkenes, and Dienes--These compounds contain one or more double bonds, i.e., carbon atoms joined together by two pairs of electrons. Because of the double bonds, these compounds are more reactive than alkanes. They may be weakly polar.

C. Alkynes--Alkynes are characterized by a triple bond. A triple bond does not react in exactly the same way as a double bond. Alkynes may be reduced to alkenes by the addition of H_2. Another important reaction of alkynes is the addition of H_2O to form aldehydes or ketones.

CATEGORY 2: ALKYL HALIDES

Alkyl halides are aliphatic hydrocarbons in which one or more hydrogens are substituted by chlorine, fluorine, bromine or iodine.

Category 2 is divided into two subcategories:

A. Saturated Alkyl Halides--Both simple alkanes and cyclic alkanes containing one or more halogens are included in this group. Such compounds are called saturated because they contain no double bonds.

B. Unsaturated Alkyl Halides--Halogenated non-aromatic hydrocarbons containing one or more double bonds are included. Unsaturated alkyl halides are more reactive than saturated compounds.

CATEGORY 3: ETHERS

Ethers are compounds in which two hydrocarbon moieties are covalently bonded to one oxygen. Ethers can be either linear or cyclic. In linear ethers the hydrocarbon moieties are unconnected alkyl or aryl groups. In cyclic ethers the oxygen atom is a constituent of a ring structure. Ethers are generally mobile liquids with high vapor pressures. They are weakly polar and are commonly used as solvents.

Ethers are not highly reactive. The ether linkage is quite stable toward bases, oxidizing agents and reducing agents. They may oxidize in air, however, to form peroxides. Ethers are highly flammable.

Category 3 is divided into two subcategories:

A. Noncyclic Aliphatic or Aromatic Ethers--These ethers are of the general formula ROR', ArOR, or ArOAr, where R is any aliphatic group and Ar is any aryl (i.e. aromatic) group.

B. Cyclic Ethers--Cyclic ethers may contain one or more ether functional groups within a ring structure.

Two special kinds of ethers are discussed in separate categories: furan and its derivatives are included in Category 24 with the heterocyclic oxygen compounds; epoxides are included with glycols in Category 6.

CATEGORY 4: HALOGENATED ETHERS AND EPOXIDES

Halogenated ethers are prepared by dehydration of halogenated alcohols. Chlorinated ethers are of particular interest and are characterized by substitution of one or more hydrogen atoms by chlorine in the alkyl radical of an ether. Most chlorinated ethers are highly toxic, and several chlorinated ethers are recognized carcinogens.

Category 4 is divided into two subcategories:

A. Monohalogenated Ethers and Epoxides--Monohalogenated ethers are ethers in which a single halogen atom replaces hydrogen on the aliphatic or aryl radical.

B. Dihalogenated and Polyhalogenated Ethers--Dihalogenated and polyhalogenated ethers have two or more halogens substituting hydrogen on the aliphatic or aryl radical.

CATEGORY 5: ALCOHOLS

Alcohols are characterized by the presence of an -OH function called a hydroxyl group. They have the general formula ROH where R is an alkyl group. The hydroxyl function may be attached to a primary, secondary, or tertiary carbon atom in the R group. Depending upon the character of the carbon to which the -OH group is bonded, alcohols may undergo two types of reactions. These reactions are (1) the removal or substitution of the -OH group, or (2) the removal or substitution of the hydrogen atom in the OH group.

Category 5 is divided into three subcategories:

A. Primary Alcohols--These are compounds in which the hydroxyl is attached to a lone carbon or a primary carbon, i.e., a carbon which is bonded to only one other carbon atom.

B. Secondary Alcohols--These alcohols are compounds in which the hydroxyl group is attached to a secondary carbon. A secondary carbon is a carbon bonded to two other carbon atoms.

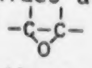
C. Tertiary Alcohols--These are compounds in which the hydroxyl group is attached to a tertiary carbon, ie., a carbon bonded to three other carbon atoms.

Glycols and phenols are two special types of alcohols which are listed in Categories 6 and 18, respectively. Glycols are alcohols containing two hydroxyl groups. Phenols contain a hydroxyl group as a substituent on a benzene ring.

CATEGORY 6: GLYCOLS, EPOXIDES

Glycols and epoxides are included in this category. Two subcategories are specified:

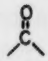
A. Glycols--Glycols are alcohols containing two hydroxyl groups. They are sometimes referred to as diols. Glycols may be formed by the hydroxylation of alkenes, the hydrolysis of halides, the bimolecular reduction of carbonyl compounds, and the hydrolysis of epoxides.

B. Epoxides--Epoxides are compounds containing a ring formed by two carbons and an oxygen: 

Epoxides are ethers, but due to configurational strains they are less stable than normal ethers.

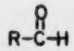
Epoxides are prepared from halohydrins and from the peroxidation of carbon-carbon double bonds. The three-membered carbon-oxygen ring gives them distinct chemical properties. They are readily hydrolyzed to glycols.

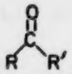
CATEGORY 7: ALDEHYDES, KETONES

Aldehydes and ketones contain the functional group  called the carbonyl group. Due to the common carbonyl functional group the properties of aldehydes and ketones are similar in many ways.

Because of the tendency of oxygen to acquire electrons, the carbonyl group is polarized, leaving it accessible and open to attack by bases. Addition reactions are typical.

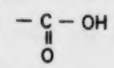
Three subcategories are specified.

A. Aldehydes--Aldehydes are compounds of the general formula  $R-\overset{O}{\overset{\|}{C}}-H$ where R may be either an aliphatic or aryl group. Aldehydes are easily oxidized and are usually more reactive toward nucleophilic addition than are ketones.

B. Ketones--Ketones are compounds of the general formula  where R and R' may be aliphatic or aryl. Ketones are oxidized only with difficulty and are generally less reactive than aldehydes toward nucleophilic addition.

C. Aldehydes and Ketones With Additional Functional Groups--This subcategory is comprised of aldehydes and ketones which contain functional groups other than the carbonyl function and simple alkyl or aryl groups. Halogenated species are included in this subcategory.

CATEGORY 8: CARBOXYLIC ACIDS AND DERIVATIVES

Carboxylic acids are highly polar. They are characterized by the presence of the carboxyl group,  $-\underset{\underset{O}{\|}}{C}-OH$, attached to either an alkyl or an aryl group.

The presence of the carbonyl function permits these compounds to function as acids. Their chief chemical reaction is loss of H^+ and replacement by another group. They can also react with bases to form salts. Other important reactions include formation of esters and amides.

This category is divided into four subcategories:

A. Carboxylic Acids--Included are simple aromatic or aliphatic carboxylic acids. Diacids are also included.

B. Carboxylic Acids with Additional Functional Groups--Included are (1) aliphatic acids with additional functional groups on carbon atoms other than the carbonyl carbon; (2) aromatic acids with additional functional groups substituted on the aromatic ring.

C. Amides--Compounds in which the OH of the carboxylic acid is replaced by $-NH_2$ are included in this subcategory. Lactams are a special kind of amide in which a hydrogen attached to the nitrogen is substituted by an alkyl function which forms a cycle with the carbonyl carbon.

D. Esters--Esters are formed when carboxylic acids condense with primary or secondary alcohols. (The H^+ is replaced by the alkyl or aryl portion of the alcohol, and water is formed). Certain esters are grouped as subspecies since an almost unlimited number of combinations are possible.

CATEGORY 9: NITRILES

Nitriles are organic compounds which contain the cyano group $-C \equiv N$. They are prepared by heating alkyl halide or diazonium salts with inorganic cyanide.

Nitriles may hydrolyse in water to yield the corresponding carboxylic acid, or they may decompose with heat to give toxic cyanide vapors. The lower molecular weight nitriles are as toxic as the inorganic cyanides.

Category 9 is divided into two subcategories:

A. Aliphatic Nitrile--Aliphatic nitriles are compounds with the general formula RCN, where R is an aliphatic group.

B. Aromatic Nitriles--Aromatic nitriles are compounds with the general formula ArCn, where Ar is an aryl group.

CATEGORY 10: AMINES

Amines are compounds of the general formula RNH_2, R_2NH, or R_3N, where R is any alkyl or aryl group. They are prepared by the reduction of nitrocompounds, the reaction of halides with ammonium or other amines, the catalytic reduction of the carbonyl function in the presence of ammonium, or by the reduction of nitriles. They are converted by acid to their salts, and the halides, nitrates, and sulfates are water soluble.

Aliphatic amines are about as basic as ammonia; aromatic amines are considerably less basic. The latter are generally very toxic and may be absorbed through the skin. The presence of the amine function on an aromatic ring activates the ring toward substitution. They are easily oxidized to the corresponding phenols.

This category is divided into four subcategories:

A. Primary Aliphatic Amines and Diamines--Compounds with a single aliphatic group attached to nitrogen are called primary amines. Other functional groups such as hydroxyl groups may also be present.

B. Secondary Aliphatic Amines--Compounds in which two alkyl groups are attached to nitrogen are secondary amines. The alkyl groups may be similar or they may be different. Cyclic nonaromatic rings containing nitrogen are included in this subcategory.

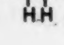
C. Aromatic Amines and Diamines--Compounds in which an aromatic ring is attached to nitrogen are called aromatic amines. Other functional groups such as halides may also be attached to the ring.

D. Tertiary Amines (Alkyl, Aryl)--Compounds in which three groups, alkyl or aryl, are attached to nitrogen are called tertiary amines.

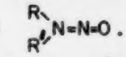
CATEGORY 11: AZO COMPOUNDS AND HYDRAZINE DERIVATIVES

Category 11 is comprised of compounds containing nitrogen-nitrogen bonds. It is divided into two subcategories:

A. Azo compounds--Azo compounds contain the group $-N=N-$ with a carbon to nitrogen linkage on both sides. The groups attached to the nitrogens may be aliphatic or aromatic. Aromatic azo compounds are highly colored compounds, often called azo dyes. They were first prepared from coal tar and are sometimes referred to as coal tar dyes.

B. Hydrazine derivatives--Hydrazine, the parent compound of these structures, is an inorganic compound. The organic derivatives, however, are similar to azo compounds. They contain the group $-N-N-$ and have the general formula  $R-\underset{H}{N}-\underset{H}{N}-R'$ where R' is an aliphatic or aryl group.

CATEGORY 12: NITROSAMINES

The generalized structure for nitrosamines is  $\begin{matrix}R\\R'\end{matrix}\!\!>N-N=O$. They are formed when an aliphatic or an aromatic secondary amine reacts with nitrous acid. Nitrosamines are generally neutral compounds, insoluble in water and in dilute aqueous mineral acids. Many nitrosamines are carcinogenic.

Category 12 is divided into two subcategories:

A. Aliphatic Nitrosamines--These compounds have the general structure $R-N-N=O$ where R is an aliphatic group.

B. Aromatic Nitrosamines--Aromatic nitrosamines have the same general structure as the aliphatic nitrosamine, where R is an aryl group.

CATEGORY 13: THIOLS, SULFIDES, AND DISULFIDES

Category 13 is comprised of hydrocarbons which contain sulfur atoms. It is divided into two subcategories:

A. Thiols--Thiols, formerly called mercaptans, are alcohols in which sulfur replaces the oxygen in the hydroxyl function. They have the general formula RSH where R may be either an aliphatic or aryl group. They are formed from alcohols and hydrogen sulfide in the presence of certain catalysts.

The common thiols are gases or liquids of high vapor pressures. They have very offensive odors which may cause nausea and headache. They are generally less toxic than hydrogen sulfide and are somewhat more acidic than the corresponding alcohols. They are flammable and emit SO_2 upon decomposition. Odor is the most important characteristic associated with thiols.

B. Sulfides and Disulfides--Sulfides and disulfides are also sulfur containing organic compounds. Sulfides have the general formula RSR' where R and R' may be either aliphatic or aryl groups.

Disulfides are characterized by sulfur-sulfur bonds with the general formula RSSR'. R and R' may be either aliphatic or aryl.

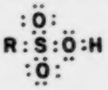
CATEGORY 14: SULFONIC ACIDS, SULFOXIDES

Category 14 is comprised of organic compounds containing sulfur-oxygen bonds.

The category is divided into two subcategories:

Sulfonic acids--These are highly polar compounds that completely ionize in aqueous solutions. As a class they are more water soluble than any other group of organic compounds.

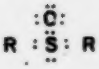
The structure of the sulfonic acids is best explained by the following diagram. Each pair of dots represents a pair of electrons.



$$\begin{array}{c} :\ddot{O}: \\ R:\ddot{\underset{..}{S}}:\ddot{\underset{..}{O}}:H \\ :\ddot{\underset{..}{O}}: \end{array}$$

Aliphatic sulfonic acids are of minor importance. Their preparation from thiols requires a powerful oxidizing agent and is unlikely. Aryl sulfonic acids formed by the sulfonation of a benzene ring are more common. Sulfonic acids are strong acids. They form salts readily and will probably be isolated as calcium, barium or lead salts.

Sulfoxides--Sulfoxides are oxidized sulfides. The general structure may be represented as follows:



$$\begin{array}{c} :\ddot{O}: \\ R:\ddot{\underset{..}{S}}:R \end{array}$$

CATEGORY 15: BENZENE, SUBSTITUTED BENZENE HYDROCARBONS

This category is comprised of benzene and compounds with simple alkyl or aryl substitution at one or more positions on the benzene ring. Fused polycyclic compounds with two or more aromatic rings are not included in this category. Cyclic structures such as indan and hydronaphathalene are included since they contain only one aromatic ring.

Category 15 is divided into two subcategories:

A. Benzene and Monosubstituted Benzene Hydrocarbons--This subcategory contains the single aromatic ring unit as well as aromatic rings substituted at a single position. The general formula for this subcategory is ArR where R may be either an aliphatic or an aryl group.

B. Disubstituted and Polysubstituted Benzene Hydrocarbons--This subcategory includes compounds with an alkyl or aryl substitution at two or more positions on the benzene ring. The general formula for this subcategory is ArR_n where n is any number from 2 through 6 or R may be any aliphatic or aryl group.

CATEGORY 16: HALOGENATED AROMATIC HYDROCARBONS

This category is comprised of simple aromatic rings with halogen or alkyl halide substituents.

The category is divided into two subcategories:

A. Ring Substituted Aromatics--This subcategory contains compounds in which one or more halogens are attached directly on an aromatic ring. Because of the numerous substitution sites on the ring, several isomers are possible for most of the aryl halides.

The chemical reactivity of these aromatic compounds is influenced substantially by the presence of the halogen on the ring. The ring is deactivated and undergoes further ring substitutions only with difficulty.

B. Aromatics with Halogenated Alkyl Side Chains--Included are aromatic compounds having an alkyl side chain in which one or more hydrogens are substituted by halogen. These compounds do not behave chemically in the same way as aryl halides. Since the site of the halogen on the side chain is active, the chemical reactions characteristic of these compounds are similar to the reactions of the alkyl halides of Category 2.

CATEGORY 17: AROMATIC NITRO COMPOUNDS

Aromatic compounds containing a nitro substituent on a benzene ring are contained in this category. The presence of the nitro groups on a benzene ring tends to deactivate the ring toward further substitution. The positions ortho and para to the nitro group are deactivated more than meta positions.

Category 17 is divided into two subcategories:

A. Simple Aromatic Nitro Compounds--This subcategory consists of nitro groups substituted on aromatic ring structures such as benzene or toluene. Nitrobenzenes are catalytically reduced amines.

B. Aromatic Nitro Compounds with Other Functional Groups--Nitro compounds containing halo, methoxy or similar functional groups are included in this subcategory. Nitrophenols are listed in Category 20.

CATEGORY 18: PHENOLS

Phenol and phenolic compounds are characterized by a hydroxyl group attached directly to an aromatic ring. The general formula is ArOH, where Ar is an aromatic ring. The ring may contain additional alkyl or aryl substitutions.

The category is divided into three subcategories:

A. Monohydrics--These compounds contain only one hydroxyl group on a ring or substituted ring.

B. Dihydrics, Polyhydrics--These are compounds in which two or more hydroxyl functions are attached to a ring.

C. Fused Ring Hydroxy Compounds--These polycyclic compounds contain a hydroxyl group.

Halophenols and nitrophenols are listed in Categories 19 and 20, respectively.

CATEGORY 19: HALOGENATED PHENOLIC COMPOUNDS

Phenolic compounds with halogen substituents are included in this category. This category is divided into two subcategories:

A. Halophenols--Halophenols are phenolic compounds with one or more halogen substituents attached directly to the hydroxy-benzene ring. The presence of the halide significantly increases the acidity of the phenol. For this reason the halophenols are distinguished as a group.

B. Halogenated Cresols--Halogenated cresols are comprised of those compounds formed by the direct attachment of halo substituents to a cresolic structure.

CATEGORY 20: NITROPHENOLS

This category consists of compounds containing both the hydroxyl and the nitro functional groups substituted on an aromatic ring. The category is divided into two subcategories:

A. Nitrophenols--Nitrophenols are phenolic compounds with one or more substituent nitro groups. Nitrophenols are more acidic than other phenols since the presence of the nitro group on the ring enables the H^+ from the hydroxyl function to be released more easily.

Because phenols offer a number of active substitution sites, a variety of isomers may be formed when the ring is nitrated.

B. Nitrocresols--Nitrocresols contain one or more nitro groups substituted on a cresolic structure.

CATEGORY 21: FUSED POLYCYCLIC HYDROCARBONS

Compounds included in this category are those with two or more fused benzene rings. Compounds containing the cyclopenta ring (called non-alternant compounds) do not permit the same degree of resonance as compounds which have only fused benzene rings. The behavior of the non-alternant compounds is different as a result of the limited resonance. The non-alternants are not included with the naphthalene family of fused aromatics but are treated separately as Category 22.

Unlike many chemical classes of compounds, toxicity data from one polynuclear aromatic cannot be extrapolated to predict toxicity of structurally similar compounds. Within this category, minor changes in structure may drastically effect oncogenic properties of these compounds. Each compound must be examined individually for indication of its carcinogenic potential.

The division into subcategories is based on the number of rings in the compound. Alkyl derivatives of the polycyclics are also included. Subcategories are:

A. Two and Three Ring Fused Polycyclic Hydrocarbons

B. Four Ring Fused Polycyclic Hydrocarbons

C. Five Ring Fused Polycyclic Hydrocarbons

D. Compounds with More Than Five Fused Rings

CATEGORY 22: FUSED NON-ALTERNANT POLYCYCLIC HYDROCARBONS

Compounds included in this category are characterized by the presence of a cyclopenta ring attached to one or more benzene rings. These compounds are distinct from compounds comprised of fused benzene rings.

The term non-alternant applies to fully conjugated hydrocarbons that contain rings with an uneven number of carbon atoms. In general, resonant structures cannot be drawn for compounds containing the cyclopenta ring (hence the name non-alternant) as can be done for the fully aromatic fused ring compounds.

Unlike many chemical classes of compounds, toxicity data from one polycyclic hydrocarbon cannot be extrapolated to predict toxicity of structurally similar compounds. Within this category, minor changes in structure may drastically effect oncogenic properties of these compounds. Each compound must be examined individually for indication of its carcinogenic potential.

Category 22 is divided into four subcategories:.

A. Two- and Three-Ring Fused Non-alternant Polycyclic Hydrocarbons

B. Four Ring Fused Non-alternant Polycyclic Hydrocarbons

C. Five Ring Fused Non-alternant Polycyclic Hydrocarbons

D. Compounds with More Than Five Fused Rings

CATEGORY 23: HETEROCYCLIC NITROGEN COMPOUNDS

A heterocyclic compound is one that contains a ring made up of more than one kind of atom. A nitrogen heterocycle contains nitrogen as a member of an aromatic carbon ring.

Unlike many chemical classes of compounds, toxicity data from one fused heterocycle cannot be extrapolated to predict toxicity of structurally similar compounds. For this category, minor changes in structure may drastically effect oncogenic properties of these compounds. Each compound must be examined individually for indication of its carcogenic potential.

This category is divided into four subcategories as follows:

A. Pyridine and Substituted Pyridines--Pyridines are distinguished by the presence of nitrogen as a hetero atom within a six-membered aromatic ring.

B. Fused Six-Membered Ring Heterocycles--These compounds contain two or more fused six-membered rings with one ring containing nitrogen as a hetero atom.

C. Pyrrole and Fused Ring Derivatives of Pyrrole--Compounds in this subcategory are characterized by the five-sided ring containing a nitrogen hetero atom.

D. Nitrogen Heterocycles Containing Additional Hetero Atoms--Included in this subcategory are those compounds containing nitrogen and other atoms, such as sulfur, as hetero atoms in aromatic rings.

CATEGORY 24: HETEROCYCLIC OXYGEN COMPOUNDS

Heterocyclic oxygen compounds are characterized by an oxygen atom as a member of an aromatic ring. The oxygen heterocycles are all derived from the five-membered heterocycle ring called furan or from xanthene which contains a six-membered heterocycle ring.

Category 24 is divided into two subcategories dependent upon the number of rings in each compound. The subcategories are:

A. One and Two Ring Heterocyclic Oxygen Compounds

B. Three or More Ring Heterocyclic Oxygen Compounds

CATEGORY 25: HETEROCYCLIC SULFUR COMPOUNDS

Heterocyclic sulfur compounds are characterized by a sulfur atom as a member of an aromatic ring. The sulfur heterocycles are all derived from the five-membered ring called thiophene.

Category 25 is divided into two subcategories depending on the number of rings involved in the formation of the compound. The subcategories are:

A. One Ring Heterocyclic Sulfur Compounds

B. Two or More Ring Heterocyclic Sulfur Compounds

CATEGORY 26: ORGANOPHOSPHOROUS COMPOUNDS

Organophosphorous compounds are carbon compounds which contain one or more atoms of phosphorous. Two subcategories are specified:

A. Aliphatic Phosphates

B. Aromatic Phosphates

APPENDIX C

MASTER LIST OF ORGANIC CHEMICALS ADDRESSED BY MULTIMEDIA ENVIRONMENTAL GOALS

A complete listing of the organic chemicals currently addressed by MEGs is given in this appendix. The compounds are ordered by categories as described in Appendix B. The MEGs identification number for each compound is given with the preferred name.

A candidate list of organic substances to be considered for MEGs in the future follows the current Master List. The candidate chemicals are listed by category.

The master list of organic chemicals presented in this appendix supplants the organic portion of the Master List (Categories 1-26) in the 1977 MEGs report, Volume I, Appendix B.*

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*Cleland, J. G., and G. L. Kingsbury. 1977. Multimedia Environmental Goals for Environmental Assessment, Volume I, EPA-600/7-77-136a.

ORGANIC CHEMICALS BY CATEGORY

CATEGORY 1: ALIPHATIC HYDROCARBONS

A. Alkanes and Cyclic Alkanes

01A020	Methane
01A040	Ethane
01A060	Propane
01A080	Butanes
01A081	n-Butane
01A082	Isobutane
01A100	Pentanes
01A101	n-Pentane
01A102	Isopentane
01A103	Neopentane
01A120	Cyclopentane
01A140	Hexanes
01A141	n-Hexane
01A142	Isohexane
01A160	Cyclohexane
01A180	Heptanes
01A181	n-Heptane
01A182	Isoheptane
01A200	Octanes
01A201	n-Octane
01A202	Isooctane
01A220	Nonanes
01A221	n-Nonane
01A222	Isononane
01A240	Alkanes (C = 10,11)
01A241	n-Decane
01A242	n-Undecane
01A260	n-Dodecane

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B. Alkenes, Cyclic Alkenes, and Dienes

01B020	Ethylene
01B040	Propylene
01B060	Butylenes
01B061	1-Butene
01B062	cis-2-Butene
01B063	trans-2-Butene
01B064	Isobutylene
01B080	Butadienes
01B081	1,2-Butadiene
01B082	1,3-Butadiene
01B100	Pentenes
01B101	1-Pentene
01B102	cis-2-Pentene
01B103	trans-2-Pentene
01B120	Cyclopentadiene
01B140	Hexenes
01B141	1-Hexene
01B142	cis-2-Hexene
01B143	trans-2-Hexene
01B144	cis-3-Hexene
01B145	trans-3-Hexene
01B160	Cyclohexene
01B180	Cyclohexadienes
01B181	1,3-Cyclohexadiene
01B182	1,4-Cyclohexadiene
01B200	Heptenes
01B201	1-Heptene
01B202	cis-2-Heptene
01B203	trans-2-Heptene
01B204	cis-3-Heptene
01B205	trans-3-Heptene
01B220	Dicyclopentadiene

C. **Alkynes**

01C020	Acetylene
01C040	Propyne
01C060	Butynes
01C061	1-Butyne
01C062	2-Butyne

CATEGORY 2: ALKYL HALIDES

A. **Saturated Alkyl Halides**

02A020	Methyl bromide
02A040	Methyl chloride
02A060	Methyl iodide
02A080	Methylene chloride (Dichloromethane)
02A100	Chloroform (Trichloromethane)
02A120	Bromodichloromethane
02A140	Dibromochloromethane
02A160	Bromoform (Tribromomethane)
02A180	Dibromodichloromethane
02A200	Dichlorodifluoromethane
02A220	Trichlorofluoromethane
02A240	Carbon tetrachloride
02A250	Ethyl chloride
02A260	1,2-Dichloroethane (Ethylene chloride)
02A280	1,1,1-Trichloroethane
02A290	1,1,2-Trichloroethane
02A300	1,1,2,2-Tetrachloroethane
02A320	Hexachloroethane
02A340	Dichloropropanes
02A341	1,1-Dichloropropane
02A342	1,2-Dichloropropane
02A343	1,3-Dichloropropane
02A344	2,2-Dichloropropane

A. Saturated Alkyl Halides (Continued)

02A360	Bromobutanes
02A361	1-Bromobutane
02A362	2-Bromobutane
02A363	2-Bromoisobutane
02A380	Hexachlorocyclohexane (Lindane)
02A400	1-Chlorooctane

B. Unsaturated Alkyl Halides

02B020	Vinyl chloride (Chloroethylene)
02B040	1,2-Dichloroethene
02B041	cis-1,2-Dichloroethene
02B042	trans-1,2-Dichloroethene
02B060	1,1-Dichloroethene
02B070	Trichloroethylene
02B080	Tetrachloroethene
02B090	1,1-Dichloro-2,2-difluoroethylene
02B100	Dichloropropenes
02B101	1,1-Dichloropropene
02B102	trans-1,2-Dichloropropene
02B103	cis-1,3-Dichloropropene
02B104	trans-1,3-Dichloropropene
02B105	2,3-Dichloropropene
02B106	3,3-Dichloropropene
02B120	Hexachlorobutadiene
02B140	Hexachlorocyclopentadiene

CATEGORY 3: ETHERS

A. Noncyclic Aliphatic or Aromatic Ethers

03A020	Isopropyl ether
03A040	2-Methoxybiphenyl
03A060	Tetrahydrofuran

B. Cyclic Ethers

03B020	1,4-Dioxane
03B040	1,3-Dioxane
03B060	2-Ethyl-4-methyl-1,3-dioxolane

CATEGORY 4: HALOGENATED ETHERS AND EPOXIDES

A. Monohalogenated Ethers and Epoxides

04A020	Chloromethyl methyl ether
04A040	2-Chloro-1,2-epoxypropane
04A050	Epichlorhydrin
04A060	1-Chloro-1,3-epoxypropane
04A080	2-Chloroethylmethyl ether
04A100	Chloromethyl ethyl ether
04A120	2-Chloroethyl ethyl ether
04A140	2-Chloroethyl vinyl ether
04A160	α-Chlorobutyl ethyl ether
04A180	4-Chlorophenyl phenyl ether
04A200	4-Bromophenyl phenyl ether

B. Dihalogenated and Polyhalogenated Ethers

04B020	1,1'-Dichloromethyl ether
04B040	1,1'-Dichlorodiethyl ether
04B060	1,2-Dichloroethyl ethyl ether
04B080	2,2'-Dichlorodiethyl ether
04B100	2,2'-Dichlorodiisopropyl ether
04B120	1,2-Dichlorodiisobutyl ether

CATEGORY 5: ALCOHOLS

A. Primary Alcohols

05A020	Methanol
05A040	Ethanol
05A060	1-Propanol
05A080	n-Butanol
05A100	Isobutyl alcohol
05A120	Pentanols (primary)
05A121	n-Pentanol
05A122	2-Methyl-1-butanol
05A123	2,2-Dimethyl-1-propanol
05A124	3-Methyl-1-butanol
05A140	Benzyl alcohol
05A160	Phenethyl alcohol

B. Secondary Alcohols

05B020	2-Propanol
05B040	2-Butanol
05B060	Pentanols (secondary)
05B061	2-Pentanol
05B062	3-Pentanol
05B063	3-Methyl-2-butanol
05B080	2,6-Dimethyl-4-heptanol
05B100	1-Phenylethanol
05B120	Borneol
05B140	Isoborneol

C. Tertiary Alcohols

05C020	t-Butyl alcohol
05C040	t-Pentanol
05C060	α-Terpineol

CATEGORY 6: GLYCOLS, EPOXIDES

A. Glycols

06A020	Ethylene glycol
06A040	Propylene glycol

B. Epoxides

06B020	2,3-Epoxy-1-propanol

CATEGORY 7: ALDEHYDES, KETONES

A. Aldehydes

07A020	Formaldehyde
07A040	Acetaldehyde
07A060	Acrolein
07A080	Propionaldehyde
07A100	Butyraldehyde
07A120	Methylbutanals
07A121	2-Methylbutanal
07A122	3-Methylbutanal
07A140	Benzaldehyde

B. Ketones

07B020	Acetone
07B060	Butanone
07B080	Isophorone
07B100	Camphor
07B120	Acetophenone
07B160	5,6-Benzo-9-anthrone
07B180	Carvones
07B181	Carvone (*d* or *l*)
07B182	Dihydro-(*d* or *l*)carvone

C. Aldehydes and Ketones with Additional Functional Groups

07C020	Tetrachloroacetone
07C040	Chlorohydroxy benzophenones
07C041	2-Chloro-2'-hydroxy benzophenone
07C042	2-Chloro-3'-hydroxy benzophenone
07C043	2-Chloro-4'-hydroxy benzophenone
07C044	2-Chloro-5-hydroxy benzophenone
07C045	3-Chloro-2'-hydroxy benzophenone
07C046	3-Chloro-2-hydroxy benzophenone
07C047	3-Chloro-3'-hydroxy benzophenone
07C048	3-Chloro-4'-hydroxy benzophenone
07C049	3-Chloro-4-hydroxy benzophenone
07C04A	4-Chloro-2-hydroxy benzophenone
07C04B	4-Chloro-2'-hydroxy benzophenone
07C04C	4-Chloro-3'-hydroxy benzophenone
07C04D	4-Chloro-4'-hydroxy benzophenone
07C04E	5-Chloro-2-hydroxy benzophenone

CATEGORY 8: CARBOXYLIC ACIDS AND DERIVATIVES

A. Carboxylic Acids

08A020	Formic acid
08A040	Acetic acid
08A060	Maleic acid
08A080	Valeric acid

A. Carboxylic Acids (Continued)

08A100	Saturated long chain acids (MW: 116-201)
08A101	Caproic acid
08A102	Caprylic acid
08A103	Capric acid
08A104	Lauric acid
08A120	Saturated long chain acids (MW: 228-285)
08A121	Myristic acid
08A122	Palmitic acid
08A123	Stearic acid
08A140	Oleic acid
08A160	Benzoic acid
08A180	Adipic acid
08A200	Phthalic acid

B. Carboxylic Acids with Additional Functional Groups

08B020	Hydroxyacetic acid
08B040	Hydroxybenzoic acids
08B041	2-Hydroxybenzoic acid
08B042	3-Hydroxybenzoic acid
08B043	4-Hydroxybenzoic acid
08B060	β-Propiolactone
08B080	γ-Butyrolactone
08B100	6-Aminohexanoic acid

C. Amides

08C020	Formamide
08C040	Acetamide
08C060	6-Hexanelactam

D. Esters

08D020	Methyl acetate
08D040	Ethyl acetate
08D060	Ethyl acrylate
08D080	Methyl methacrylate
08D100	Propyl acetates
08D101	n-Propyl acetate
08D102	Isopropyl acetate

D. Esters (Continued)

08D120	Butyl acetates
08D121	n-Butyl acetate
08D122	sec-Butyl acetate
08D123	Isobutyl acetate
08D140	Amyl acetates
08D141	n-Amyl acetate
08D142	sec-Amyl acetate
08D143	Isoamyl acetate
08D160	Methyl benzoate
08D180	Phenyl benzoate
08D200	Diethyl adipate
08D220	Dibutyl adipate
08D240	Di-2-ethylbutyl adipate
08D260	Di-2-ethylhexyl adipate
08D280	Phthalate esters (MW: 194-279)
08D281	Dimethyl phthalate
08D282	Diethyl phthalate
08D283	Di-n-butyl phthalate
08D300	Di-2-ethylhexyl phthalate
08D320	Butyl benzyl phthalate

CATEGORY 9: NITRILES

A. Aliphatic Nitriles

09A020	Acetonitrile
09A040	Acrylonitrile
09A060	1-Cyanoethane
09A080	Butyronitrile
09A100	1,3-Dicyano-1-hydroxybutane
09A120	Tetramethylsuccinonitrile

B. Aromatic Nitriles

09B020	Benzonitrile
09B040	Naphthonitriles
09B041	α-Naphthonitriles
09B042	β-Naphthonitriles

CATEGORY 10: AMINES

A. Primary Aliphatic Amines and Diamines

10A020	Methylamine
10A040	Ethylamine
10A060	Ethanolamine
10A080	1,2-Diaminoethane
10A100	1-Aminopropane
10A110	3-Aminopropene
10A120	Propanolamines
10A121	2-Amino-1-propanol
10A122	3-Amino-1-propanol
10A123	1-Amino-2-propanol
10A140	Butylamines
10A141	1-Aminobutane
10A142	2-Aminobutane
10A143	2-Amino-2-methylpropane
10A160	Cyclohexylamine

B. Secondary Aliphatic Amines

10B020	Ethyleneimine
10B040	Dimethylamine
10B060	Ethylmethylamine
10B080	Diethylamine
10B100	Morpholine

C. Aromatic Amines and Diamines

10C020	Aniline
10C040	Aminotoluenes
10C041	2-Aminotoluene
10C042	3-Aminotoluene
10C043	4-Aminotoluene
10C060	Dimethylanilines (Xylidines)
10C061	2,3-Xylidine
10C062	2,4-Xylidine
10C063	2,5-Xylidine
10C064	2,6-Xylidine
10C065	3,4-Xylidine
10C066	3,5-Xylidine

C. **Aromatic Amines and Diamines (Continued)**

10C080	Anisidines
10C081	o-Anisidine
10C082	m-Anisidine
10C083	p-Anisidine
10C100	1,4-Diaminobenzene
10C120	4-Aminobiphenyl
10C140	Benzidine
10C160	3,3'-Dichlorobenzidine
10C180	4,4'-Methylene bis(2-chloroaniline)
10C200	1-Aminonaphthalene
10C220	2-Aminonaphthalene

D. Tertiary Amines (Alkyl, Aryl)

10D020	N,N-Dimethylaniline

CATEGORY 11: AZO COMPOUNDS, HYDRAZINE DERIVATIVES

A. Azo Compounds

11A020	Diazomethane
11A040	p-Dimethylaminoazobenzene

B. Hydrazine Derivatives

11B020	Monomethylhydrazine
11B040	N,N-Dimethylhydrazine
11B060	N,N'-Dimethylhydrazine
11B080	1,2-Diphenylhydrazine

CATEGORY 12: NITROSAMINES

A. Aliphatic Nitrosamines

12A020	N-Nitrosodimethylamine
12A040	N-Nitrosodiethylamine
12A060	N-Nitrosodipropylamine
12A080	N-Nitrosodiisopropylamine
12A100	N-Nitrosodipentylamine

B. Aromatic Nitrosamines

12B020	N-Methyl-N-nitrosoaniline
12B040	N-Nitrosodiphenylamine

CATEGORY 13: THIOLS, SULFIDES, AND DISULFIDES

A. Thiols

13A020	Methanethiol
13A040	Ethanethiol
13A060	Propanethiols
13A061	Propane-1-thiol
13A062	Propane-2-thiol
13A080	n-Butanethiol
13A100	Benzenethiol
13A120	Anthracenethiols
13A121	2-Anthracenethiol
13A122	9-Anthracenethiol
13A140	Perchloromethanethiol

B. Sulfides, Disulfides

13B020	Dimethyl sulfide
13B040	Diethyl sulfide
13B060	Diphenyl sulfide
13B080	Methyldisulfide

CATEGORY 14: SULFONIC ACIDS, SULFOXIDES

A. Sulfonic Acids

14A020	Benzenesulfonic acid
14A040	Anthraquinone-disulfonic acids
14A041	9,10-Anthraquinone-1,5-disulfonic acid
14A042	9,10-Anthraquinone-1,6-disulfonic acid
14A043	9,10-Anthraquinone-1,7-disulfonic acid
14A044	9,10-Anthraquinone-1,8-disulfonic acid

B. Sulfoxides

14B020	Dimethyl sulfoxide

CATEGORY 15: BENZENE, SUBSTITUTED BENZENE HYDROCARBONS

A. Benzene and Monosubstituted Benzene Hydrocarbons

15A020	Benzene
15A040	Toluene
15A060	Ethyl benzene
15A080	Styrene
15A100	Propyl benzene
15A120	Isopropyl benzene
15A140	Butyl benzenes
15A141	n-Butyl benzene
15A142	sec-Butyl benzene
15A143	tert-Butyl benzene
15A160	Biphenyl

B. Disubstituted and Polysubstituted Benzene Hydrocarbons

15B020	Indan
15B060	4,4'-Diphenylbiphenyl
15B080	Xylenes
15B081	o-Xylene
15B082	m-Xylene
15B083	p-Xylene
15B100	Dialkyl benzenes (MW: 134-191)
15B101	o-Diethyl benzene
15B102	m-Diethyl benzene
15B103	p-Diethyl benzene
15B104	o-Diisopropyl benzene
15B105	m-Diisopropyl benzene
15B106	1,4-Di-tert-butyl benzene
15B120	Tetrahydronaphthalene
15B140	Dihydronaphthalenes
15B141	1,2-Dihydronaphthalene
15B142	1,4-Dihydronaphthalene
15B160	Terphenyls
15B161	o-Terphenyl
15B162	m-Terphenyl
15B163	p-Terphenyl

B. Disubstituted and Polysubstituted Benzene Hydrocarbons (Continued)

15B180	Trimethylbenzenes
15B181	1,2,3-Trimethylbenzene
15B182	1,2,4-Trimethylbenzene
15B183	1,3,5-Trimethylbenzene
15B200	Tetramethylbenzenes
15B201	1,2,3,4-Tetramethylbenzene
15B202	1,2,3,5-Tetramethylbenzene
15B203	1,2,4,5-Tetramethylbenzene

CATEGORY 16: HALOGENATED AROMATIC COMPOUNDS

A. Ring Substituted Aromatics

16A020	Chlorobenzene
16A040	Bromobenzene
16A060	Dibromobenzenes
16A061	1,2-Dibromobenzene
16A062	1,3-Dibromobenzene
16A063	1,4-Dibromobenzene
16A080	Bromochlorobenzenes
16A081	1-Bromo-2-chlorobenzene
16A082	1-Bromo-3-chlorobenzene
16A083	1-Bromo-4-chlorobenzene
16A100	1,2-Dichlorobenzene
16A120	1,3-Dichlorobenzene
16A140	1,4-Dichlorobenzene
16A160	Polychlorinated benzenes
16A161	1,2,4-Trichlorobenzene
16A162	Hexachlorobenzene
16A180	2-Chlorotoluene
16A200	Chloronaphthalenes
16A201	1-Chloronaphthalene
16A202	2-Chloronaphthalene
16A220	Polychlorinated biphenyls

B. Aromatics with Halogenated Alkyl Side Chains

16B020	α-Chlorotoluene
16B040	bis(Chloromethyl)benzenes
16B041	1,2-bis(Chloromethyl)benzene
16B042	1,3-bis(Chloromethyl)benzene
16B043	1,4-bis(Chloromethyl)benzene

CATEGORY 17: AROMATIC NITRO COMPOUNDS

A. Simple Aromatic Nitro Compounds

17A020	Nitrobenzene
17A040	Nitrotoluenes
17A041	2-Nitrotoluene
17A042	3-Nitrotoluene
17A043	4-Nitrotoluene
17A060	4-Nitrobiphenyl
17A080	Dinitrotoluenes
17A081	2,6-Dinitrotoluene
17A082	3,4-Dinitrotoluene
17A083	2,3-Dinitrotoluene
17A084	2,4-Dinitrotoluene
17A085	2,5-Dinitrotoluene
17A086	3,5-Dinitrotoluene

B. Aromatic Nitro Compounds with Other Functional Groups

17B020	Methoxynitrobenzenes
17B021	1-Methoxy-2-nitrobenzene
17B022	1-Methoxy-3-nitrobenzene
17B023	1-Methoxy-4-nitrobenzene
17B040	1-Chloro-2-nitrobenzene
17B060	1-Chloro-4-nitrobenzene

CATEGORY 18: PHENOLS

A. Monohydrics

18A020	Phenol
18A040	Cresols
18A041	m-Cresol
18A042	o-Cresol
18A043	p-Cresol
18A060	2-Methoxyphenol
18A080	Ethylphenols
18A081	o-Ethylphenol
18A082	m-Ethylphenol
18A083	p-Ethylphenol
18A100	Phenylphenols
18A101	o-Phenylphenol
18A102	p-Phenylphenol
18A103	m-Phenylphenol
18A120	2,2'-Dihydroxydiphenyl
18A140	Xylenols (Dimethyl phenols)
18A141	2,3-Xylenol
18A142	2,4-Xylenol
18A143	2,5-Xylenol
18A144	2,6-Xylenol
18A145	3,5-Xylenol
18A146	3,4-Xylenol
18A160	Ethyl cresols
18A161	6-Ethyl-m-cresol
18A162	4-Ethyl-o-cresol
18A163	2-Ethyl-p-cresol
18A180	Polyalkyl phenols (MW > 135)
18A181	2,4,6-Trimethyl phenol
18A182	2,6-Di-sec-butyl phenol
18A183	2,6-Dimethyl-4-heptyl phenol

B. Dihydrics, Polyhydrics

18B020	Catechol
18B040	1,3-Dihydroxybenzene
18B060	1,4-Dihydroxybenzene
18B080	1,2,3-Trihydroxybenzene

C. Fused Ring Hydroxy Compounds

18C020	1-Naphthol
18C040	2-Naphthol
18C060	Phenanthrols (Hydroxyphenanthrenes)
18C061	1-Hydroxyphenanthrene
18C062	2-Hydroxyphenanthrene
18C063	3-Hydroxyphenanthrene
18C064	4-Hydroxyphenanthrene
18C065	9-Hydroxyphenanthrene
18C080	Indanols
18C081	1-Indanol
18C082	4-Indanol
18C083	5-Indanol
18C100	1-Acenaphthol
18C120	2-Hydroxyfluorene
18C140	2-Hydroxydibenzofuran

CATEGORY 19: HALOGENATED PHENOLIC COMPOUNDS

A. Halophenols

19A020	2-Chlorophenol
19A040	2,4-Dichlorophenol
19A050	2,4,6-Trichlorophenol
19A060	Pentachlorophenol

B. Halogenated Cresols

19B020	Chlorinated cresols
19B021	Chlorinated-o-cresol
19B022	Chlorinated-m-cresol
19B023	Chlorinated-p-cresol

CATEGORY 20: NITROPHENOLIC COMPOUNDS

A. Nitrophenols

20A020	2-Nitrophenol
20A040	3-Nitrophenol
20A060	4-Nitrophenol
20A080	2-Amino-4,6-dinitrophenol
20A100	Dinitrophenols
20A101	2,4-Dinitrophenol
20A102	2,5-Dinitrophenol
20A103	2,6-Dinitrophenol
20A120	2,4,6-Trinitrophenol

B. Nitrocresols

20B020	4,6-Dinitro-o-cresol
20B040	Dinitro-p-cresols
20B041	3,5-Dinitro-p-cresol
20B042	2,6-Dinitro-p-cresol

CATEGORY 21: FUSED POLYCYCLIC HYDROCARBONS

A. Two- and Three-Ring Fused Polycyclic Hydrocarbons

21A020	Naphthalene
21A040	Monoalkyl naphthalenes
21A041	1-Methylnaphthalene
21A042	2-Methylnaphthalene
21A043	1-Ethylnaphthalene
21A044	2-Ethylnaphthalene
21A060	Phenylnaphthalenes
21A061	1-Phenylnaphthalene
21A062	2-Phenylnaphthalene
21A080	Dimethylnaphthalenes
21A081	1,4-Dimethylnaphthalene
21A082	2,3-Dimethylnaphthalene
21A083	2,6-Dimethylnaphthalene

A. Two- and Three-Ring Fused Polycyclic Hydrocarbons (Continued)

21A100	Acenaphthene
21A120	Acenaphthylene
21A140	Anthracene
21A160	2,7-Dimethylanthracene
21A180	Phenanthrene
21A200	Methylphenanthrenes
21A201	1-Methylphenanthrene
21A202	3-Methylphenanthrene

B. Four Ring Fused Polycyclic Hydrocarbons

21B020	Naphthacene
21B040	Benz(a)anthracene
21B060	7,12-Dimethylbenz(a)anthracene
21B080	3-Methylcholanthrene
21B100	Benzo(c)phenanthrene and alkyl derivatives
21B101	Benzo(c)phenanthrene
21B102	1-Methyl benzo(c)phenanthrene
21B103	2-Methyl benzo(c)phenanthrene
21B104	5-Methyl benzo(c)phenanthrene
21B105	6-Methyl benzo(c)phenanthrene
21B106	7-Methyl benzo(c)phenanthrene
21B107	8-Methyl benzo(c)phenanthrene
21B108	2-Ethyl benzo(c)phenanthrene
21B109	6-Ethyl benzo(c)phenanthrene
21B10A	n-propyl benzo(c)phenanthrene
21B10B	Isopropyl benzo(c)phenanthrene
21B120	Chrysene
21B140	Methyl chrysenes
21B141	4-Methyl chrysene
21B142	5-Methyl chrysene
21B160	Triphenylene
21B180	Pyrene
21B200	1-Methylpyrene
21B220	Dimethylpyrenes
21B221	3,4-Dimethylpyrene
21B222	4,5-Dimethylpyrene

C. Five Ring Fused Polycyclic Hydrocarbons

21C020	1,2-Benzonaphthacene
21C040	Benzo(g)chrysene
21C060	Dibenz(a,c)anthracene
21C080	Dibenz(a,h)anthracene
21C100	Benzo(a)pyrene
21C120	Benzo(e)pyrene
21C140	Perylene
21C160	Picene

D. Compounds with More than Five Fused Rings

21D020	Dibenzo(a,h)pyrene
21D040	Dibenzo(a,i)pyrene
21D060	Dibenzo(a,l)pyrene
21D080	Benzo(ghi)perylene
21D100	Coronene

CATEGORY 22: FUSED NON-ALTERNANT POLYCYCLIC HYDROCARBONS

A. Two- and Three-Ring Fused Non-Alternant Polycyclic Hydrocarbons

22A010	Indene
22A020	Fluorene
22A040	Cyclopentanonaphthalene

B. Four Ring Fused Non-Alternant Polycyclic Hydrocarbons

22B020	2,3-Benzofluorene
22B040	Fluoranthene
22B060	1,2-Benzofluorene
22B080	Cyclopenta(def)phenanthrene

C. Five Ring Fused Non-Alternant Polycyclic Hydrocarbons

22C020	Benzo(k)fluoranthene
22C040	Benzo(j)fluoranthene
22C060	1,2:5,6-Dibenzofluorene
22C080	Benzo(b)fluoranthene

D. Compounds with More than Five Fused Rings

22D020	Indeno(1,2,3-cd)pyrene
22D040	Tribenzylene benzene

CATEGORY 23: HETEROCYCLIC NITROGEN COMPOUNDS

A. Pyridine and Substituted Pyridines

23A020	Pyridine
23A040	Picolines (Methylpyridines)
23A041	2-Methylpyridine
23A042	3-Methylpyridine
23A043	4-Methylpyridine
23A060	Monosubstituted alkyl pyridines
23A061	2-Ethylpyridine
23A062	3-Ethylpyridine
23A063	4-Ethylpyridine
23A064	4-n-Propylpyridine
23A080	Phenylpyridines
23A081	2-Phenylpyridine
23A082	3-Phenylpyridine
23A083	4-Phenylpyridine
23A100	Chloropyridines
23A101	2-Chloropyridine
23A102	3-Chloropyridine
23A103	4-Chloropyridine
23A120	Collidines
23A121	5-Ethyl-2-methylpyridine
23A122	2,4,6-Collidine
23A140	Disubstituted, polysubstituted alkyl pyridines
23A141	2,3-Dimethylpyridine
23A142	2,4-Dimethylpyridine
23A143	2,5-Dimethylpyridine
23A144	2,6-Dimethylpyridine
23A145	3,4-Dimethylpyridine
23A146	2,3,4,6-Tetramethylpyridine

B. Fused Six-Membered Ring Heterocycles

23B020	Quinolines
23B021	Quinoline
23B022	Isoquinoline
23B040	2-Methylquinoline
23B060	Dimethylquinolines and dimethylisoquinolines
23B061	2,3-Dimethylquinoline
23B062	2,6-Dimethylquinoline
23B063	2,8-Dimethylquinoline
23B064	3,4-Dimethylquinoline
23B065	6,8-Dimethylquinoline
23B066	1,3-Dimethylisoquinoline
23B067	1,5-Dimethylisoquinoline
23B080	Acridine
23B100	Dihydroacridine
23B120	Phenanthridine
23B140	Benzo(f)quinoline
23B160	Benzo(h)quinoline
23B180	Benz(a)acridine
23B200	Benz(c)acridine
23B220	Dibenz(a,j)acridine
23B240	Dibenz(a,h)acridine
23B260	Dibenz(c,h)acridine
23B280	2,3-Benz-4-azafluorene
23B300	Indeno(1,2,3,ij)isoquinoline

C. Pyrrole and Fused Ring Derivatives of Pyrrole

23C020	Pyrrole
23C040	Indole
23C060	Methylindoles
23C061	2-Methylindole
23C062	3-Methylindole
23C080	Carbazole

C. Pyrrole and Fused Ring Derivatives of Pyrrole (Continued)

23C100	Methylcarbazoles
23C101	3-Methylcarbazole
23C102	9-Methylcarbazole
23C120	Benzo(a)carbazole
23C140	Dibenzo(a,i)carbazole
23C160	Dibenzo(c,g)carbazole
23C180	Dibenzo(a,g)carbazole

D. Nitrogen Heterocycles Containing Additional Hetero Atoms

23D020	Benzothiazole
23D040	2-Methyl benzothiazole

CATEGORY 24: HETEROCYCLIC OXYGEN COMPOUNDS

A. One- and Two-Ring Heterocyclic Oxygen Compounds

24A020	Furan
24A040	Benzofuran
24A060	Methylbenzofurans
24A061	2-Methylbenzofuran
24A062	3-Methylbenzofuran
24A063	5-Methylbenzofuran
24A064	7-Methylbenzofuran

B. Three or More Ring Heterocyclic Oxygen Compounds

24B020	Dibenzofuran
24B040	Naphthofurans
24B041	Naphtho(1,2-b)furan
24B042	Naphtho(2,1-b)furan
24B043	Naphtho(2,3-b)furan
24B060	Benzo(b)naphtho(2,3-d)furan
24B080	Phenanthro(9,10-b)furan
24B100	1,9-Benzoxanthene

CATEGORY 25: HETEROCYCLIC S COMPOUNDS

A. One Ring Heterocyclic S Compounds

25A020	Thiophene
25A040	Methylthiophenes

A. One Ring Heterocyclic S Compounds (Continued)

25A041	2-Methylthiophene
25A042	3-Methylthiophene
25A060	Dimethylthiophenes
25A061	2,3-Dimethylthiophene
25A062	2,4-Dimethylthiophene
25A063	2,5-Dimethylthiophene
25A064	3,4-Dimethylthiophene
25A080	Trimethyl and tetramethyl thiophenes
25A081	2,3,5-Trimethylthiophene

B. Two or More Ring Heterocyclic S Compounds

25B020	2,2'-Bithiophene
25B040	Benzo(b)thiophene
25B060	Dibenzothiophene
25B080	Benzonaphthothiophenes
25B081	Benzo(b)naphtho(2,3-d)thiophene
25B082	Benzo(b)naphtho(1,2-d)thiophene
25B083	Benzo(b)naphtho(2,1-d)thiophene

CATEGORY 26: ORGANOPHOSPHOROUS COMPOUNDS

A. Aliphatic Organophosphorous Compounds

26A020	Triethyl phosphate

B. Aromatic Organophosphorous Compounds

26B020	Triphenyl phosphate
26B040	Tritolyl phosphates
26B041	Tri-o-tolyl phosphate
26B042	Tri-m-tolyl phosphate
26B043	Tri-p-tolyl phosphate

CANDIDATE LIST OF ORGANIC SUBSTANCES

CATEGORY 1

Dimethylcyclohexane
Trimethylcyclohexane
3-Methyl pentane
3-Methyl-1-butene
Pentadiene
Octadecane
Hexadecane
Eicosane
Tripropane
Tetrapropylene
Isoprene
8,3-bis(Methylene)bicyclo[3,8,1]octane
2,5-Dimethylundecane
2,6-Dimethylundecane
2-Methyltricosane
10-Methyleicosane
2,6,11-Trimethyldodecane
4,11-Dimethyltetradecane
5-Ethyl-5-propylundecane
2,2,4,4,6,8,8-Heptamethylnonane
1,3a,6,8a-Tetrahydro-1,6-ethenazulene
2,4-Dimethyl-2,3-heptadien-5-yne
Methyl cyclopentane
Isodecane
Nonene
4-Vinylcyclohexane
α-Pinene
β-Pinene
Methylcyclohexane
Heptadecane

CATEGORY 1 (Continued)

2-Methyl-pentane
Dimethyldecahydronaphthalene
Decahydropyrenes
Tetrahydroacenaphthenes
Decahydronaphthalene

CATEGORY 2

1,1,2,2-Tetrachloropropane
1,1,2,3,4,4-Hexachloro-1,2,3,4-tetrafluorobutane
Carbon tetrabromide
Carbon tetrafluoride
Chlorendocyclooctadiene
Chlorinated eicosane
Dichloroiodomethane
1-Chloro-1,1-difluoroethane
1,1,2,2-Tetrabromoethane
Bromoethylene
Ethylene Dibromide
Dichlorofluoromethane
Dibromomethane
bis(2-Chloroethyl)methane
Bromochloromethane
Bromotrifluoromethane
Dibromodifluoromethane
Hexabromocyclododecane
1,2,3-Trichloropropane
1-Chloro-2-methyl propene
3-Chloropropene
3-Chloro-2-methyl propene
1,1,1,2,2-Pentachloroethane
1,1,2,3,4,4-Hexachloro-1,3-butadiene
2-Chloro-1,3-butadiene

CATEGORY 2 (Continued)

1,4-Dichloro-2-butane
2,2-Dichloroethane
bis(Chlorendo)bicyclopentadiene
bis(Chlorendo)cyclooctadiene
bis(Hexachlorocyclopentadiene)
Dibromochloropropane
Hexachloronorboradiene
Bromochlorendocyclooctadiene
Allyl chloride
6-Bromo-1,1a,6,6a-tetrahydrocycloprop(a)indene
1,2-Dibromo-3-chloropropane

CATEGORY 3

Diethyl ether
Phenyl-2-propynyl ether
Ethylene oxide
2,2'-[1,10-decanediylbis(oxy)]-2H-pyran
2,2'-[1,10-decanediylbis(oxy)]bistetrahydro-2H-pyran
Dimethylethylphenoxybenzene
1-Methoxyethenyl benzene
2-Methoxynaphthalene
1-Methoxynaphthalene
9-Methoxyfluorene
Dimethyl ether
Propylene oxide
Dihydromethylphenylbenzofuran
3,3-Hydro-2-methylbenzofuran
Dimethoxymethane
1,2-Dimethoxybenzene

CATEGORY 4

Pentachloromethoxybenzene
bis(2-Chloroethoxy)methane

CATEGORY 5

2-Chloro-α-methyl benzene methanol
3-p-Tolyl-2-propyn-1-ol
5-Butyl-5-nonanol
2-Butyl-1-octanol
1-Phenyl-2-cyclopenten-1-ol
3,7,11-Trimethyl-2,6,10-dodecatrien-1-ol
Hydroxyisopropylbenzene
Dibromobutenediol
2-Aminoethanol
2-Butoxyethanol
2-(2-Butyoxyethoxy)ethanol
2-Chloroethanol
2-Dimethylaminoethanol
2-Ethoxyethanol
2-(2-Ethoxyethoxy)ethanol
2-Methoxyethanol
2-(2-Methoxy)ethanol
2-(2-[2-Methoxyethoxyl]ethoxy)ethanol
2,2'-Iminodiethanol
2,2',2'-Nitrilotriethanol
2-Ethyl-1-hexanol
2-Methyl-1-pentanol
4-Methyl-2-pentanol
1-Chloro-2-propanol
1,1'-Oxydi-2-propanol
2,3-Dibrompropanol
2,2'-(Ethylimino)diethanol
Tribromoeopentyl alcohol
Allyl alcohol
1-Aziridineethanol
2,3-Epoxy-1-propanol
1-Amino-2-propanol nitrite

CATEGORY 2 (Continued)

1,4-Dichloro-2-butane
2,2-Dichloroethane
bis(Chlorendo)bicyclopentadiene
bis(Chlorendo)cyclooctadiene
bis(Hexachlorocyclopentadiene)
Dibromochloropropane
Hexachloronorboradiene
Bromochlorendocyclooctadiene
Allyl chloride
6-Bromo-1,1a,6,6a-tetrahydrocycloprop(a)indene
1,2-Dibromo-3-chloropropane

CATEGORY 3

Diethyl ether
Phenyl-2-propynyl ether
Ethylene oxide
2,2'-[1,10-decanediylbis(oxy)]-2H-pyran
2,2'-[1,10-decanediylbis(oxy)]bistetrahydro-2H-pyran
Dimethylethylphenoxybenzene
1-Methoxyethenyl benzene
2-Methoxynaphthalene
1-Methoxynaphthalene
9-Methoxyfluorene
Dimethyl ether
Propylene oxide
Dihydromethylphenylbenzofuran
3,3-Hydro-2-methylbenzofuran
Dimethoxymethane
1,2-Dimethoxybenzene

CATEGORY 4

Pentachloromethoxybenzene
bis(2-Chloroethoxy)methane

CATEGORY 5

2-Chloro-α-methyl benzene methanol
3-p-Tolyl-2-propyn-1-ol
5-Butyl-5-nonanol
2-Butyl-1-octanol
1-Phenyl-2-cyclopenten-1-ol
3,7,11-Trimethyl-2,6,10-dodecatrien-1-ol
Hydroxyisopropylbenzene
Dibromobutenediol
2-Aminoethanol
2-Butoxyethanol
2-(2-Butyoxyethoxy)ethanol
2-Chloroethanol
2-Dimethylaminoethanol
2-Ethoxyethanol
2-(2-Ethoxyethoxy)ethanol
2-Methoxyethanol
2-(2-Methoxy)ethanol
2-(2-[2-Methoxyethoxyl]ethoxy)ethanol
2,2'-Iminodiethanol
2,2',2'-Nitrilotriethanol
2-Ethyl-1-hexanol
2-Methyl-1-pentanol
4-Methyl-2-pentanol
1-Chloro-2-propanol
1,1'-Oxydi-2-propanol
2,3-Dibrompropanol
2,2'-(Ethylimino)diethanol
Tribromoeopentyl alcohol
Allyl alcohol
1-Aziridineethanol
2,3-Epoxy-1-propanol
1-Amino-2-propanol nitrite

CATEGORY 6

Butyl phthalyl glycolate
Diethylene glycol
Dipropylene glycol
Triethylene glycol
1,2:3,4-Diepoxybutane
(t-)-1,2:3,4-Diepoxybutane
1,2:3,4-Diepoxy-meso-butane
Dibromoneopentyl glycol
Tetraethylene glycol
1,2-Epoxybutane
t-Butylperoxide
bis(Dimethylethyl)peroxide
Epoxyethyl benzene
Benzolylperoxide

CATEGORY 7

Dimethylbenzaldehyde
N-nonal
Pentanal
N-Octanal
Undecanal
Dedecanal
Dihydroxyanthraquinone
Benzophenone
1-Phenyl-1-propanone
2-Pentanone
o-Hydroxyacetophenone
m-Hydroxyacetophenone
Tetrahydroanthroquinone
Methylisopropyl ketone
1,4-Benzene dicarboxaldehyde
Methyl isopropanone
Methyl indanone
4-Hydroxy-4-methyl pentanone
3-Methyl-2-pentanone

CATEGORY 7 (Continued)

Benzofluorenone
Xanthione
9-Fluorenone
Phenanthridone
Methylcyclopentanone
Paraformaldehyde
Dihydroindenone
Dimethylindenone
Diphenylindenone
Hydroxy(hydroxyphenyl)benzopyranone
Diallylacetal palmitaldehyde
3-Methyl-2-(1,3-pentadienyl)-2-cyclopenten-1-one
3-Methoxy-3-benzofuran carboxylic aldehyde
p-Benzoquinone dioxime
7-Diethylamino-4-methyl coumarin
7-Hydroxy-4-methyl coumarin
2-Dodecyl-9,10-dihydro-phenanthrone
1-Ethyl-9,10-anthracenedione
3-Phenyl-2-propanal
2,3-Dihydro-1H-inden-1-one
3-Methyl-2H-1-benzopyren-2-one
Bicyclo(4,4,1)undeca-1,3,5,7,9-pentaen-11-one
1-Phenyl-3-hexenone
7-Hydroxy-4-methyl-2H-benzopyran-2-one
2',5'-Dimethyl crotonophenone
9H-Thioanthene-9-one
1,5-bis(4-Methylphenyl)-1,4-pentadiyn-3-one
O-1(Naphthalenylmethyl)oxime cyclohexanone
2-(2,3-Dihydro-1H-inden-1-ylidene)-2,3-dihydro-1H-inden-1-one
7-Hydroxy-2-(4-hydroxyphenyl)-4H-1-benzopyran-4-one
1-Phenyl-2-(4-phenyl-3H-1,2-dithiol-3-ylidene)ethanone
7H-Benz(de)anthracen-7-one
5,7-Dimethoxy-2-(4-methoxyphenyl)-4H-1-benzopyran-4-one
5,6-Dihydro-4-hydroxy-3,6-dimethoxymorphinan-7-one

CATEGORY 7 (Continued)

Crotonaldehyde

2-Ethyl-3-propyl acrolein

Chloroacetophenone

2-Heptanone

2-Hexanone

5-Methyl-2-hexanone

1-Chloro-2-propanone

1,1,1,3,3,3-Hexachloro-2-propanone

2,2-Dichloroacetaldehyde

Methyl isobutyl ketone

5-Methyl-3-heptanone

Chloroacetaldehyde

Furfural

1-Nitrooctanone

CATEGORY 8

Didocyl phthalate

Diisobutyl phthalate

Dicyclohexyl phthalate

Butylphenyl butylphthalate

Di-n-octyl phthalate

2-Nitrodimethyl-1,4-benzene dicarboxylate

Phenyl butyl phenoxymethyl acetate

Vinyl acetate

2-Naphthalene carboxylic acid

1-Methyltridecyl octanoic acid ester

6,7,8,9,10,11-Hexahydro-1,6-dimethyl-10,11-dioxophenthro-[1,2-b]furan-6-carboxylic acid methyl ester

Trans-2,3-dihydro-2-methoxy-3-benzofuran carboxylic acid methyl ester

3-(3,4-Dimethyl oxyphenyl)-2-propenoic acid methyl ester

5-(3-methyl-2-benzofuranyl)-2,5-hexadienoic acid methyl ester

N-(4-iodophenyl)-3-phenyl-2-propenamide

N-[2-Amino-1-(phenylamino)carbonyl ethenyl] benzene acetamide

Isobutyl cinnamate

CATEGORY 8 (Continued)

3-Benzylindene phthalate imide
N-Octyl N-decyl phthalate
Diazoacetic acid ethyl ester
Acetic acid, benzyl ester
Chloracetic acid
Iminodiacetic acid
Nitrilotriacetic acid
Trichloroacetic acid
Acetic anhydride
Acrylic acid, butyl ester
Acrylic acid, methyl ester
Acrylic acid, 2-cyanomethyl ester
Acrylic acid, 2-ethylhexyl ester
Naphthenic acid
Urea
Urethane
Oxalic acid
t-Butyl peroxybenzoic acid ester
Peroxyacetyl nitrate
Stearic acid methyl ester
Di(2-ethyl hexyl) azelate
bis(2-Ethyl hexyl)adipic acid ester
N-Octyl N-decyl adipic acid ester
Ammonium acetate
Ammonium benzoate
o-Amino benzoic acid
2-(4-Dimethylamino)benzoic acid
Triethylamine citric acid
Diisodecyl phthalate
Diisooctyl phthalate
Dioctyl adipate
Dioxin

CATEGORY 8 (Continued)

Fumaric acid
Isophthalic acid
Dibutyl maleic acid ester
Butyl methacrylic acid ester
Ethyl methacrylic acid ester
Phthalic anhydride
2-(2,4,5-Tri-chlorophenoxy)propanoic acid
2-(2,4,5-Tri-chlorophenoxy)propanoic acid isooctyl ester
Propionic acid
Propionic acid anhydride
Linolenic acid
bis(2-Ethylhexyl)sebacic acid ester
Terephthalic acid
Tetrachlorophthalic anhydride
Ammonium oxalate
Butyric acid
Chlorendic acid
Chlorendic anhydride
Vinyl acetate
2,4,5-Trichlorophenoxy acetic acid
Dimethyl terephthalate
Ditridecyl phthalate
Fulvic acid
Acetyl peroxide
9,10-Epoxyoctadecanoic acid
Dicyanodiamide
Dicyclohexylphthalate
Fluoroacetamide
N,N-Dimethylformamide
Nitrilotriacetic acid
9,10-Epoxyoctadecanoic acid
Peroxoacetic acid

CATEGORY 8 (Continued)

1,3-Pentadiene-1-carboxylic acid
2-Ethylhexanoic acid
2-Propenoic acid butyl ester
2,2-Dichloropropionic acid
Acetyl bromide
Acetyl chloride
Acetic oxide
3,4-Epoxycyclohexane carboxylic acid
Acrylamide
Tetrabromophthalic anhydride
Methyl hydrocinnamic acid
Phenyl acetic acid
Ethylenediaminetetraacetic acid

CATEGORY 9

Pentylnitrile
Benzene acetonitrile
Isobutyronitrile
Hexylnitrile
Propane nitrile
Cyanobutadiene
Ethyl isothiocyanate
1,4-Dihydro-1,4-methanonaphthalene-2,2,3,3-tetracarbonitrile
2,2'-Dicyanobiphenyl
Acetone cyanohydrin
Ethylene cyanohydrin
Polyacrylonitrile
3-Aminopropionitrile
Adiponitrile
Nitromethane
1-Nitropropane
2-Nitropropane
Toluenediisocyanate

CATEGORY 10

4-(1,2,3,4-Tetrahydro-2-naphinyl)-morpholine
n-Methyl-o-toleridine
Isopropylamine
Trimethylamine
Triethylamine
Hexaethylenediamine
Diethylenetriamine
Triethylene tetramine
Monoethanolamine
Diethanolamine
Diisopropanolamine
Triethanolamine
Aminoethylethanolamine
o-Decylhydroxylamine
4-Chloro-N1-(4-methoxyphenyl)-1,2-benzenediamine
1,1'-Ethenylidene bis-benzene
2-(1-Azido-1-methyl ethyl)-1,1'-biphenyl
4-Nitro-o-phenylenediamine
Dihydrochloride p-phenylenediamine
N,N-Diphenyl p-phenylenediamine
Aminopyrene
o-Chloroaniline
p-Nitroaniline
p-(Phenylazo)-aniline
N,N-Diethylaniline
N-Methyl-N,2,4,6-tetranotroaniline
2,4,5-Trimethylaniline
3,4-Dichloroaniline
4,4'-Methylenedianiline
2,2'-Dichloro-n-methyl diethylamine
Diethylenetriamine
2,2',4,4',6,6'-Diphenylamine
Diphenylamine
4-Isopropoxy diphenylamine

CATEGORY 10 (Continued)

Dodecylamine
N-(1-Naphthyl)ethylenediamine
Hexamethylenetetraamine
Hydroxylamine
N-Phenyl hydroxylamine
o-Methyl hydroxylamine
2-Methyl aziridine
3,3'-Dimethoxybenzidine
o-Ethylthreonine
Toluene-2,4-diamine
N,N-bis(2-Chloroethyl)2-naphthylamine
N-Phenyl-2-naphthylamine
N,N-Dinitrospenta methylene tetramine
Triethylenetetramine
1,6-Hexanediamine
2-Biphenylamine
2-Chloroaniline
2-Anthramine
2,4-Dinitroaniline
Propylamine nitrate
Quinzzoline
2,4-Diaminotoluene
3,4-Dichloroaniline
4,4'-bis(Dimethylamino)benzophenone

CATEGORY 11

N,N-Diphenylhydrazine
Maleichydrazide

CATEGORY 12

N-Nitrosomethylurea
N-Nitrosomethylurethane
N-Nitrosoguanidine
N,N-Dimethyl-p-nitrosoaniline
N-Nitroso-d-N-propylamine

CATEGORY 13

Trithiohexane
2,3,4-Trithiopentane
Thiophenol
Methoxyphenyldithiolone
Thiocresol
Dodecyl mercaptan
Tetrahydrothiophene
Thioacetamide

CATEGORY 14

1,1,2,2,3,3,4,4,4-Nonafluoro-n-methyl-1-butanesulfonamide
Dibromo-p-xylane sulfonic acid
Dodecylbenzenesulfonate
Dodecylbenzenesulfonic acid
Dodecylbenzenesulfonic acid, isopropanolime salt
Dodecyl xylene sulfonic acid
Ethyl methane sulfonate
N-Ethyl toluene sulfonamide
Triethanolamine dodecyl benzenesulfonate
N-Cyclohexyl-2-benzothiazole sulfenamide
4,4'-Diamino-2,2'-stilbenedisulfonic acid

CATEGORY 15

Diphenylethyne
Methylbutylbenzene
Methyl styrene
Dimethylindan
3-Methylbiphenyl
Ethyl styrene
Pentamethylindan
1,2-Dimethylbenzene
Methylindan
n-Pentyl benzene
Methylbiphenyl
3,5-Dimethyl-1-isopropylbenzene

CATEGORY 15 (Continued

Cyclobutadibenzene
1,2-Diphenyl propane
Methylphenylethyne
Dixylylethane
Ethenyldimethylbenzene
Ethenylidenebisbenzene
2-Ethyl-1,1'-biphenyl
1,4-Dimethyl-1,1'-biphenyl
4,4-Dimethyl-1,1'-biphenyl
1,2,Dimethyl-4-(phenylmethyl)benzene
1,1-Dimethylethylbenzene
1,1-Dimethylpropylbenzene
Trimethyl(1-methylethyl)-benzene
4-Ethenyl-1,2-dimethylbenzene
1,1-Dimethyl-2-propenyl benzene
[6-Cyclopentyl-3-(3-cyclopentylpropyl)hexyl]benzene
2,4-Dimethyl-1-(1-methylethyl)benzene
1,4-Dimethyl-2-(1-methylethyl)benzene
1,1'-[3-Cyclopentylpropyl)-1,5-pentanedicyl]bisbenzene
Benzo(3,4)cyclobuta[1,2-a]cyclobuta(b)cycloheptene
Divinyl benzene
1,2-(Methylenedioxy)-4-propenyl benzene
bis(1-Methyl-1-phenylethyl)peroxide
Vinyl toluene
Methyltetrahydronaphthalene
5,8-Dimethyl-1-N-octyl-1,2,3,4-tetrahydronaphthalene
1-Methyl-4-N-heptyl-1,2,3,4-tetrahydronaphthalene
Dimethyltetrahydronaphthalene
Trimethyltetrahydronaphthalene
1,2-Dihydro-3,3-trimethylnaphthalene
Octahydrophenanthrenes
Ethenodihydronaphthalene

CATEGORY 15 (Continued)

Dimethyldihydronaphthalene
Dihydroacenaphthalene
1,4-Dihydro-1,4-methanenaphthalene
1,2,4,4-Tetrahydro-5,6-dimethylnaphthalene
1,2,4,4-Tetrahydro-6,7-dimethylnaphthalene
6-Ethyl-1,2,3,4-tetrahydronaphthalene
1,2,3,4-Tetrahydro-1,1,6-trimethylnaphthalene
Methyl-2,3-dihydroindene
Dimethylhydroindene
2-Hexadecyl-2,3-dihydro-1H-indene
2,3-Dihydro-1,6-dimethyl-1H-indene

CATEGORY 16

Perfluorotoluene
(Chlorocyclohexyl)methylbenzene
2-(p-Bromophenyl)-1,1-diphenylethylene
2-(o-Chlorophenyl)-1,4-diphenylethylene
Chlorobenzilate
Hexabromobenzene
Hexabromobiphenyl
Pentachlorobenzene
Polychlorinated triphenyls
Brominated diphenyls
α,α,α-trichlorotoluene
1,2,3-Trichlorobenzene
1,2,3,4-Tetrachlorobenzene
1,2,4,5-Tetrachlorobenzene
2,3,7,8-Tetrachlorodibenzo-p-dioxin
Chlorinated styrenes
Brominated naphthalenes
Pentachloronaphthalene
Tetrachloronaphthalene
Trichloronaphthalene

CATEGORY 17

1-Nitronaphthalene
1-Chloro-3-nitrobenzene
Pentachloronitrobenzene

CATEGORY 18

4-Tert-butyl-o-cresol
o-Allylphenol
Di-1-butyl-4-ethylphenol
Fluorenol
1,1a,6,6a-Tetrahydrocycloprop(a)inden-6-ol
1,2-Dihydro-3-methyl-benz(j)acenaphthylene-1,2-diol
Methylhydroxynaphthalene
Methyldihydroxynaphthalene
4,4'-Butylidenebis(6-tert-butyl)m-cresol
4,4'-Thiobis(6-tert-butyl)-m-cresol
p-tert-Amyl phenol
Diethylstilbestrol
Dodecylphenol
4,4'-Isopropylidenediphenol
Nonyl phenol
3-Methoxyphenol

CATEGORY 19

3,4,5-Trichlorophenol
Bromodichlorophenol
o-Benzyl-p-chlorophenol
2,3,4,6-Tetrachlorophenol
2,4,5-Trichlorophenol

CATEGORY 20

2,4-Dinitro-6-sec-butylphenol
1-Nitroso-2-hydroxynaphthalene

CATEGORY 21

Methylacenaphthalene
Methylbenz(a)anthracene
1,2,3,4-Tetrahydro-9,10-benzophenanthrene
Hexahydrobenz(a)anthracene

CATEGORY 21 (Continued)

2-Methyl-9,10-benzophenanthrene
5,8-Dimethylbenz(c)phenanthrene
2-n-Hexylperylene
3,6-Dimethyloxyphenanthrene
Propenylphenanthrene
9-Methylanthracene
Isopropylnaphthalene
4,5-Methylenephenanthrene
2,7-Methylphenanthrene
Methylacenaphthalene
2-Benzylnaphthalene
Trimethylnaphthalene
Trans-9-propenylphenanthrene
1-Methyl-7-isopropylnaphthalene
3-n-Butylphenanthrene
Ethylanthracene
Tetrahydroanthracene
Tetrahydrophenanthrene
Hexahydropyrenes
Dihydropyrenes
Methylethylnaphthalene
Dimethylethylnaphthalene
Trimethylphenanthrene
Tetrahydronaphthacene
Ethenodihydroanthracene
Methylanthracene
Tetramethylphenanthrene
Dimethylbinaphthalene
Binaphthalene
1,4-Dihydro-1,4-ethenonaphthalene
1-Pentadecyclnaphthalene
2,7-Dimethylnaphthalene
1,6-Dimethylnaphthalene

CATEGORY 21 (Continued)

1,8-Dimethylnaphthalene
1,6,7-Trimethylnaphthalene
2,3,6-Trimethylnaphthalene
1-(1,1-Dimethylethyl)naphthalene
1-Methyl-7-(1-methylethyl)naphthalene
16,17-Dihydro-3-(1-methylethyl)-15H-cyclopenta[a]phenanthrene
1,4-Dihydro-1,4-methanonaphthalene
1,4-Dihydro-1,4-ethenoanthracene
4-Decyl-1,2,3,6,7,8-hexahydropyrene

CATEGORY 22

1-Methylfluorene
Dimethylfluorene
1,2,3,4-Tetrahydrofluoranthene
Methylindene
Dimethylindene
Trimethylindene
Indenotetrahydroindene
cis-4b,5,9b,10-Tetrahydroindeno(2,1-a)indene

CATEGORY 23

3-N-Propylquinoline
4-N-propylquinoline
3-Methylbenzoquinoline
o-N-Propylquinoline
3-Methylquinoline
6-Methylquinoline
Ethylquinoline
Vinyl phenylcarbazole
1,2,3,4-Tetrahydrocarbazole
3-Amino-9-ethylcarbazole
Methyl phenylquinoxaline
Phenyl indole
3-Methyl-3-allyhydroindole
3-Methyl-2-phenylindole

CATEGORY 23 (Continued)

3,3'-Biindolyl
2,4-Dimethyl-6-ethylpyridine
4-Acetalpyridine
2-Hydroxy-4-phenylpyridine
2-Hydroxy-6-phenylpyridine
3,4-Diphenylpyridine
2-Amino-5-chloro-4,6-dimethylpyrimidine
2-Amino-4-phenyl-6-methylpyrimidine
Dimethyl acridine
2,2'-Dimethyl-4,4'-dipyridyl
2-Ethylbenzimidazole
Diphenyloxazole
Methylbenzimidazole
2-Methyl-5-phenyltetrazole
2-Benzimidazole
Dimethylbenzimidazole
Methylpyrrole
Dimethylpyrrole
Azabenzopyrene
Azabenzofluoranthene
Azapyrene
Benzoquinoline
Methylcinnoline
Methylanthroquinoline
Styrylquinoline
Methylphenylcinnoline
Methylbenzocinnoline
1-(1-Phenylethenyl)pyridinium
1-Ethylquinolinium iodide
4,7,8-Trimethoxyfuro[2,3-b]quinoline
6-Methyl-3-phenylcinnoline
4-Methylbenzo(c)cinnoline
4-Styrylquinoline

CATEGORY 23 (Continued)

1-Methyl-2-phenylpyridinium perchlorate
2-Chloro-6-methyl-13H-benz[6,7]indolo(3,2-c)quinoline
3[2-(Dimethylamino)ethyl]-2,3-dihydro-3-methyl-1H-indol-2-ol
3-(4-Chlorophenyl)-4,5-dihydro-1-phenyl-1H-pyrazole
4-Ethyl-2-propylthiazole
1H-Anthra(a,1,9-cde)indole
x-Azabenzo(ghi)fluoranthene
z-Azabenzo(ghi)perylene
Anthra(1,9-ab)carbazole
6-Nitro-benzimidazole
2,4,6-Trichloro-2-triazine
Hexahydro-1,3,5-trinitro-s-triazine
6-Ethoxy-1,2-dihydro-2,2,4-trimethylquinoline
1-Methyl pyrrolidine
8-Hydroxyquinoline
1,4-Dihydro-2,3-benzocarbazole
2-(Morpholine-thio)benzothiazole
2,2'-Dithiobisbenzothiazole

CATEGORY 24

3,6-Dimethylbenzofuran
2,3-Dihydro-2-(1-propenyl)-naphtho(1,2-b)furan
bis(Chlorendo)furan

CATEGORY 25

Isopropylthiophene
Ethylthiophene
2-n-Propyl-5-isobutylthiophene
Methylbenzothiophene
Trimethylbenzothiophene
Methyldibenzothiophene
Benzodithiophene
1,3-Dihydro-4,6-dimethylthieno(3,4-c)thiophene
1-Methylbenzo(1,2,-14,3)dithiophene
3-Methyl-dibenzothiophene

CATEGORY 25 (Continued)

5-Methyl-2,3-benzothiophene
2,6-Dimethylbenzo(b)thiophene
Naphthothiophene
Methyldibenzothiophene
4,9-Dimethylnaphtho(2,3-b)thiophene
Tetrahydrothiophene dioxide
2,5-Dihydrothiophene-1,1-dioxide

CATEGORY 26

Tributylphosphate
Diethyl-2-bromoethyl phosphate
Pentachlorophosphorane
5,5,5-Tributyl phosphorotrithioic acid ester
Tetraethyl pyrophosphate
tris(Isopropylphenyl)phosphate
tris(2-butoxyethyl)phosphate
Triphenyl phosphate
tris(2-Chloroethyl)phosphate
tris(2-Ethylhexyl)phosphate
tris(2,3-Dibromopropyl)phosphate
tris(2,3-Dichloropropyl)phosphate
tris(2,4,6-Tribromophenyl)phosphate
tris(4-bromophenyl)phosphate
bis(2-Chloroethyl)vinyl phosphonate
Hexaethyltetraphosphate
bis(2-Chloroethyl)phosphoric acid
Phenyl phosphoric acid
Alkyl phosphothioates
o-Methylphenyl phosphonic acid
Triethyl phosphine

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APPENDIX D

TABULATED MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES FOR ORGANIC CHEMICALS

Minimum Acute Toxicity Effluent (MATE) values describe concentrations of contaminants in source emissions to air, water, or land that will not evoke significant or irreversible harmful responses in human populations or ecosystems that might be exposed, provided the exposures are of limited duration. MATE values for air, water, and solid waste are tabulated in this appendix for each organic compound currently addressed by MEGs. The compounds and their MATE values are listed by category. MEG identification numbers are provided for cross reference with the complete MEG charts and background information summaries in Appendix A (Volumes III and IV).

The tabulated MATE values correspond to the MATE values given under Emission Level Goals on the MEG charts in Appendix A. The user should consult the charts and summaries in Appendix A for the bases of MATE values for each chemical. The absence of MATE values indicates that necessary data are not available.

Compounds in italics are subspecies; information on these compounds is included with the summary for the parent species (the name of the parent species precedes the italicized compound). Values for MATEs are expressed in scientific notation to facilitate comparison and to simplify presentation; the number following the "E" is understood to be the exponent of 10. For example, 4.2E3 means 4.2×10^3, or 4,200.

A listing of the most stringent MATE values for each subcategory follows the complete MATE value table.

Models used to derive the MATEs are summarized in Tables 2 and 3 in Section 2.5 of this volume. In applying the values tabulated in this appendix, the user should be aware that the MATEs are dependent upon data such as TLVs®, NIOSH recommendations, lethal and sublethal concentrations or doses and existing Federal guidelines for environmental protection. There are uncertainties associated with these basic data, and in addition, arbitrary safety factors are incorporated in some of the equations to generate the MATEs. A worst case approach is applied consistently, however, so that the reported values are expected to err on the conservative side.

This listing supersedes the MATE values for Categories 1-25 tabulated in Appendix C of the 1977 MEGs report, Volume I.*

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*Cleland, J. G., and G. L. Kingsbury. 1977. Multimedia Environmental Goals for Environmental Assessment, EPA 600/7-77-136a.

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
			Health	Ecology	Health	Ecology	Health	Ecology
01A	01A020	Methane	3.3E6(5,000)	6.5E6(1x10^4)	4.9E7	1.0E5	N/A	N/A
	01A040	Ethane	6.1E6(5,000)	1.2E7(1x10^4)	9.2E7	...	N/A	N/A
	01A060	Propane	9.0E6(5,000)	1.8E7(1x10^4)	1.4E8	1.0E5	N/A	N/A
	01A080	Butanes	1.4E6(600)	2.4E7(1x10^4)	2.1E7	1.0E5	N/A	N/A
	01A081	*n-Butane*	1.4E6(600)	2.4E7(1x10^4)	2.1E7	1.0E5	N/A	N/A
	01A082	*Isobutane*	1.4E6(600)	2.4E7(1x10^4)	2.1E7	1.0E5	N/A	N/A
	01A100	Pentanes	3.5E5(120)	...	5.3E6	1.0E3	1.1E6	2.0E2
	01A101	*n-Pentane*	3.5E5(120)	...	5.3E6	1.0E3	1.1E6	2.0E2
	01A102	*Isopentane*	3.5E5(120)	...	5.3E6	1.0E3	1.1E6	2.0E2
	01A103	*Neopentane*	3.5E5(120)	...	5.3E6	1.0E3	1.1E6	2.0E2
	01A120	Cyclopentane	3.5E5(120)	...	5.3E6	1.0E5	1.1E6	2.0E4
	01A140	Hexanes	3.5E5(100)	...	5.3E6	1.0E5	1.1E6	2.0E4
	01A141	*n-Hexane*	3.5E5(100)	...	5.3E6	1.0E5	1.1E6	2.0E4
	01A142	*Isohexane*	3.5E5(100)	...	5.3E6	1.0E5	1.1E6	2.0E4
	01A160	Cyclohexane	3.5E5(100)	...	5.3E6	1.0E3	1.1E6	2.0E2
	01A180	Heptanes	3.5E5(85)	...	5.3E6	1.0E5	1.1E6	2.0E4
	01A181	*n-Heptane*	3.5E5(85)	...	5.3E6	1.0E5	1.1E6	2.0E4
	01A182	*Isoheptane*	3.5E5(85)	...	5.3E6	1.0E5	1.1E6	2.0E4
	01A200	Octanes	3.5E5(75)	...	5.3E6	1.0E4	1.1E6	2.0E3
	01A201	*n-Octane*	3.5E5(75)	...	5.3E6	1.0E4	1.1E6	2.0E3
	01A202	*Isooctane*	3.5E5(75)	...	5.3E6	1.0E4	1.1E6	2.0E3
	01A220	Nonanes	1.0E6(200)	...	1.6E7	...	3.1E6	...
	01A221	*n-Nonane*	1.0E6(200)	...	1.6E7	...	3.1E6	...
	01A222	*Isononane*	1.0E6(200)	...	1.6E7	...	3.1E6	...
	01A240	Alkanes(C=10,11)	1.0E6	...	1.6E7	...	3.1E6	...
	01A241	*n-Decane*	1.0E6	...	1.6E7	...	3.1E6	...
	01A242	*n-Undecane*	1.0E6	...	1.6E7	...	3.1E6	...
	01A260	n-Dodecane	1.0E6	...	1.6E7	...	3.1E6	...
01B	01B020	Ethylene	5.7E6(5,000)	1.0E0	8.6E7	1.0E4	N/A	N/A
	01B040	Propylene	8.6E6(5,000)	1.7E5	1.3E7	1.0E5	N/A	N/A
	01B060	Butylenes	9.1E6(4,000)	2.3E7(1x10^4)	1.4E8	...	N/A	N/A
	01B061	*1-Butene*	9.1E6(4,000)	2.3E7(1x10^4)	1.4E8	...	N/A	N/A
	01B062	*cis-2-Butene*	9.1E6(4,000)	2.3E7(1x10^4)	1.4E8	...	N/A	N/A
	01B063	*trans-2-Butene*	9.1E6(4,000)	2.3E7(1x10^4)	1.4E8	...	N/A	N/A
	01B064	*Isobutylene*	9.1E6(4,000)	2.3E7(1x10^4)	1.4E8	...	N/A	N/A

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MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
			Health	Ecology	Health	Ecology	Health	Ecology
	01B080	Butadienes	2.2E6(1,000)	2.2E6	3.3E7	1.0E3	N/A	N/A
	01B081	*1,2-Butadiene*	2.2E6(1,000)	2.2E6	3.3E7	1.0E3	N/A	N/A
	01B082	*1,3-Butadiene*	2.2E6(1,000)	2.2E6	3.3E7	1.0E3	N/A	N/A
	01B100	Pentenes	3.5E5(120)	3.5E3	5.3E6	...	1.1E6	...
	01B101	*1-Pentene*	3.5E5(120)	3.5E3	5.3E6	...	1.1E6	...
	01B102	*cis-2-Pentene*	3.5E5(120)	3.5E3	5.3E6	...	1.1E6	...
	01B103	*trans-2-Pentene*	3.5E5(120)	3.5E3	5.3E6	...	1.1E6	...
	01B120	Cyclopentadiene	2.0E5(75)	...	3.0E6	...	6.0E5	...
	01B140	Hexenes	3.5E5(100)	8.3E2	5.3E6	1.0E5	1.1E6	2.0E4
	01B141	*1-Hexene*	3.5E5(100)	8.3E2	5.3E6	1.0E5	1.1E6	2.0E4
	01B142	*cis-2-Hexene*	3.5E5(100)	8.3E2	5.3E6	1.0E5	1.1E6	2.0E4
	01B143	*trans-2-Hexene*	3.5E5(100)	8.3E2	5.3E6	1.0E5	1.1E6	2.0E4
	01B144	*cis-3-Hexene*	3.5E5(100)	8.3E2	5.3E6	1.0E5	1.1E6	2.0E4
	01B145	*trans-3-Hexene*	3.5E5(100)	8.3E2	5.3E6	1.0E5	1.1E6	2.0E4
	01B160	Cyclohexene	3.5E5(100)	...	5.3E6	...	1.1E6	...
	01B180	Cyclohexadienes	3.5E5(100)	...	5.3E6	...	1.1E6	...
	01B181	*1,3-Cyclohexadiene*	3.5E5(100)	...	5.3E6	...	1.1E6	...
	01B182	*1,4-Cyclohexadiene*	3.5E5(100)	...	5.3E6	...	1.1E6	...
	01B200	Heptenes	3.5E5(85)	...	5.3E6	1.0E5	1.1E6	2.0E4
	01B201	*1-Heptene*	3.5E5(85)	...	5.3E6	1.0E5	1.1E6	2.0E4
	01B202	*cis-2-Heptene*	3.5E5(85)	...	5.3E6	1.0E5	1.1E6	2.0E4
	01B203	*trans-2-Heptene*	3.5E5(85)	...	5.3E6	1.0E5	1.1E6	2.0E4
	01B204	*cis-3-Heptene*	3.5E5(85)	...	5.3E6	1.0E5	1.1E6	2.0E4
	01B205	*trans-3-Heptene*	3.5E5(85)	...	5.3E6	1.0E5	1.1E6	2.0E4
	01B220	Dicyclopentadiene	3.0E4(5)	...	4.5E5	1.0E2	9.0E4	2.0E1
01C	01C020	Acetylene	2.7E6(2,500)	1.1E5(100)	4.1E7	...	N/A	N/A
	01C040	Propyne	1.7E6(1,000)	...	2.5E7	...	N/A	N/A
	01C060	Butynes	2.2E6(1,000)	...	3.3E7	...	6.6E6	...
	01C061	*1-Butyne*	2.2E6(1,000)	...	3.3E7	...	6.6E6	...
	01C062	*2-Butyne*	2.2E6(1,000)	...	3.3E7	...	6.6E6	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air μg/m^3 (ppm)		Water μg/l		Solid Waste μg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
02A	02A020	Methyl bromide	6.0E4	...	9.0E5	1.0E5	...	...
	02A040	Methyl chloride	2.1E5(100)	...	3.2E6	1.0E5	...	...
	02A060	Methyl iodide	8.5E2	...	1.3E4	...	2.6E3	...
	02A080	Methylene chloride	2.6E5(75)	...	3.9E6	1.0E4	7.8E3	2.0E1
	02A100	Chloroform	1.0E4(2)	...	1.5E5	1.0E3	3.0E4	2.0E2
	02A120	Bromodichloromethane	4.5E4	...	6.8E5	...	1.4E5	...
	02A140	Dibromochloromethane	4.5E4	...	6.8E5	...	1.4E5	...
	02A160	Bromoform	5.0E3(0.5)	...	7.5E4	...	1.5E4	...
	02A180	Dibromodichloromethane	1.4E3	...	2.1E4	...	4.2E3	...
	02A200	Dichlorodifluoromethane	5.0E6(1,000)	...	7.4E7	1.0E5	...	...
	02A220	Trichlorofluoromethane	5.6E6(1,000)	...	8.4E7	...	1.7E7	...
	02A240	Carbon tetrachloride	1.3E4(2)	...	2.0E5	1.0E3	4.0E4	2.0E2
	02A250	Ethyl chloride	2.6E6(1,000)	...	3.9E7	1.0E5	...	...
	02A260	1,2-Dichloroethane	2.0E5(50)	...	3.0E6	1.0E4	6.0E4	2.0E3
	02A280	1,1,1-Trichloroethane	5.4E5(100)	...	8.0E6	1.0E3	1.6E6	2.0E2
	02A290	1,1,2-Trichloroethane	5.4E4(10)	...	8.4E5	1.0E3	1.6E5	2.0E2
	02A300	1,1,2,2-Tetrachloroethane	7.0E3(1)	...	1.1E5	...	2.1E4	...
	02A320	Hexachloroethane	1.0E4	...	1.5E5	...	3.0E2	...
	02A340	Dichloropropanes	3.5E5(75)	...	5.3E6	1.0E3	1.0E6	2.0E2
	02A341	*1,1-Dichloropropane*	3.5E5(75)	...	5.3E6	1.0E3	1.0E6	2.0E2
	02A342	*1,2-Dichloropropane*	3.5E5(75)	...	5.3E6	1.0E3	1.0E6	2.0E2
	02A343	*1,3-Dichloropropane*	3.5E5(75)	...	5.3E6	1.0E3	1.0E6	2.0E2
	02A344	*2,2-Dichloropropane*	3.5E5(75)	...	5.3E6	1.0E3	1.0E6	2.0E2
	02A360	Bromobutanes	5.6E4	...	8.5E5	...	1.7E5	...
	02A361	*1-Bromobutane*	5.6E4	...	8.5E5	...	1.7E5	...
	02A362	*2-Bromobutane*	5.6E4	...	8.5E5	...	1.7E5	...
	02A363	*2-Bromoisobutane*	5.6E4	...	8.5E5	...	1.7E5	...
	02A380	Hexachlorocyclohexane	5.0E2	...	2.0E1	2.0E-2	4.0E0	4.0E-3
	02A400	1-Chlorooctane	...	...	...	...	...	...
02B	02B020	Vinyl chloride	2.6E3	...	3.8E4	1.0E5	7.7E3	2.0E4
	02B040	1,2-Dichloroethene	7.9E5(200)	...	1.2E7	1.0E4	2.4E6	2.0E3
	02B041	*cis-1,2-Dichloroethene*	7.9E5(200)	...	1.2E7	1.0E4	2.4E6	2.0E3
	02B042	*trans-1,2-Dichloroethene*	7.9E5(200)	...	1.2E7	1.0E4	2.4E6	2.0E3
	02B060	1,1-Dichloroethene	4.0E4(10)	...	6.0E5	1.0E4	1.2E5	2.0E3
	02B070	Trichloroethylene	5.4E5		8.0E6	1.0E4	1.6E6	2.0E3
	02B080	Tetrachloroethene	6.7E5(100)	...	1.0E7	1.0E3	2.0E6	2.0E2
	02B090	1,1-Dichloro-2,2-difluoroethylene	4.6E5	...	6.9E6	...	1.4E6	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air μg/m^3 (ppm)		Water μg/l		Solid Waste μg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
02B	02B100	Dichloropropenes	1.1E4	...	1.7E5	1.0E3	3.4E4	2.0E2
	02B101	*1,1-Dichloropropene*	1.1E4	...	1.7E5	1.0E3	3.4E4	2.0E2
	02B102	*trans-1,2-Dichloropropene*	1.1E4	...	1.7E5	1.0E3	3.4E4	2.0E2
	02B103	*cis-1,3-Dichloropropene*	1.1E4	...	1.7E5	1.0E3	3.4E4	2.0E2
	02B104	*trans-1,3-Dichloropropene*	1.1E4	...	1.7E5	1.0E3	3.4E4	2.0E2
	02B105	*2,3-Dichloropropene*	1.1E4	...	1.7E5	1.0E3	3.4E4	2.0E2
	02B106	*3,3-Dichloropropene*	1.1E4	...	1.7E5	1.0E3	3.4E4	2.0E2
	02B120	Hexachlorobutadiene	4.1E3	...	6.1E4	...	1.2E4	...
	02B140	Hexachlorocyclopentadiene	1.1E2(0.01)	...	1.6E3	...	3.3E2	...
03A	03A020	Isopropyl ether	1.1E6	...	1.6E7	1.0E4	3.2E6	2.0E3
	03A040	3-Methoxybiphenyl	1.6E5	...	2.4E6	...	4.9E5	...
	03A060	Tetrahydrofuran	5.9E5(200)	...	9.0E6	...	1.8E6	...
03B	03B020	1,4-Dioxane	3.6E3(1)	...	5.4E4	1.0E4	1.1E4	2.0E3
	03B040	1,3-Dioxane	3.6E3(1)	...	5.4E4	...	1.1E4	...
	03B060	2-Ethyl-4-methyl-1,3-dioxolane	1.3E5	...	1.9E6	...	3.8E5	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

			Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
Category	**MEG No.**	**Pollutant**	**Health**	**Ecology**	**Health**	**Ecology**	**Health**	**Ecology**
04A	04A020	Chloromethyl methyl ether	2.9E3	...	4.3E4	1.0E4	8.8E3	2.0E3
	04A040	2-Chloro-1,2-epoxypropane	2.0E3	...	3.0E4	1.0E3	6.0E3	2.0E2
	04A050	Epichlorhydrin	2.0E3(0.5)	...	3.0E4	1.0E3	6.0E3	2.0E2
	04A060	1-Chloro-1,3-epoxypropane	2.0E3(0.5)	...	3.0E4	1.0E3	6.0E3	2.0E2
	04A080	2-Chloroethylmethyl ether	...	...	...	...	...	...
	04A100	Chloromethyl ethyl ether	...	...	...	...	...	...
	04A120	2-Chloroethyl ethyl ether	1.1E4	...	1.7E5	...	3.4E4	...
	04A140	2-Chloroethyl vinyl ether	1.1E4	...	1.7E5	...	3.4E4	...
	04A160	α-Chlorobutyl ethyl ether	...	...	...	...	...	...
	04A180	Chlorophenyl phenyl ether	2.7E4	...	4.1E5	...	8.1E4	...
	04A200	4-Bromophenyl phenyl ether	2.7E4	...	4.1E5	...	8.1E4	...
04B	04B020	1,1'-Dichloromethyl ether	5.0E0(.001)	...	7.5E1	...	1.5E1	...
	04B040	1,1'-Dichlorodiethyl ether	3.0E4	...	4.5E5	1.0E4	9.0E4	2.0E3
	04B060	1,2-Dichloroethyl ethyl ether	...	...	...	...	...	...
	04B080	2,2'-Dichlorodiethyl ether	3.0E4	...	4.5E5	1.0E4	9.0E4	2.0E3
	04B100	2,2'-Dichlorodiisopropyl ether	1.1E4	...	1.6E5	...	3.2E4	...
	04B120	1,2-Dichlorodiisobutyl ether	...	...	...	...	...	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air µg/m^3 (ppm) Health	Air Ecology	Water µg/l Health	Water Ecology	Solid Waste µg/g Health	Solid Waste Ecology
05A	05A020	Methanol	2.6E5(200)	...	3.9E6	1.0E5	7.8E5	2.0E4
	05A040	Ethanol	1.9E6(1,000)	...	2.9E7	1.0E5	5.8E6	2.0E4
	05A060	1-Propanol	5.0E5(200)	...	7.5E6	1.0E4	1.5E6	2.0E3
	05A080	n-Butanol	1.5E5(50)	...	2.3E6	1.0E5	4.5E5	2.0E4
	05A100	Isobutyl alcohol	1.5E5(50)	...	2.3E6	1.0E4	4.5E5	2.0E3
	05A120	Pentanols (primary)	3.6E5(100)	...	5.4E6	1.0E4	1.1E6	2.0E3
	05A121	*n-Pentanol*	3.6E5(100)	...	5.4E6	1.0E4	1.1E6	2.0E3
	05A122	*2-Methyl-1-butanol*	3.6E5(100)	...	5.4E6	1.0E4	1.1E6	2.0E3
	05A123	*2,2-Dimethyl-1-propanol*	3.6E5(100)	...	5.4E6	1.0E4	1.1E6	2.0E3
	05A124	*3-Methyl-1-butanol*	3.6E5(100)	...	5.4E6	1.0E4	1.1E6	2.0E3
	05A140	Benzyl alcohol	5.5E4	...	8.3E5	1.0E4	1.7E5	2.0E3
	05A160	Phenethyl alcohol	8.1E4	...	1.2E6	...	2.4E5	...
05B	05B020	2-Propanol	9.8E5(400)	...	1.5E7	1.0E4	3.0E6	2.0E3
	05B040	2-Butanol	4.5E5(150)	...	6.8E6	1.0E5	1.4E6	2.0E4
	05B060	Pentanols (secondary)	3.6E5(100)	...	5.4E6	...	1.1E6	...
	05B061	*2-Pentanol*	3.6E5(100)	...	5.4E6	...	1.1E6	...
	05B062	*3-Pentanol*	3.6E5(100)	...	5.4E6	...	1.1E6	...
	05B063	*3-Methyl-2-butanol*	3.6E5(100)	...	5.4E6	...	1.1E6	...
	05B080	2,6-Dimethyl-4-heptanol	1.6E5	...	2.4E6	...	4.8E5	...
	05B100	1-Phenylethanol	1.8E4	...	2.7E5	...	5.4E4	...
	05B120	Borneol	9.0E4	...	1.4E6	...	2.7E5	...
	05B140	Isoborneol	9.0E4	...	1.4E6	...	2.7E5	...
05C	05C020	t-Butyl alcohol	3.0E5(100)	...	4.5E6	1.0E5	9.0E5	2.0E4
	05C040	t-Pentanol	4.5E4	...	6.8E5	1.0E5	1.4E5	2.0E4
	05C060	α-Terpineol	1.9E5	...	2.9E6	...	5.8E5	...
06A	06A020	Ethylene glycol	1.0E4	...	1.5E5	1.0E4	3.0E4	2.0E3
	06A040	Propylene glycol	9.5E5	...	1.4E7	1.0E5	2.8E6	2.0E4
06B	06B020	2,3-Epoxy-1-propanol	1.5E5(50)	...	2.3E6	...	4.5E5	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air μg/m^3 (ppm)		Water μg/l		Solid Waste μg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
07A	07A020	Formaldehyde	1.2E3	5.0E2	1.8E4	1.0E3	3.6E3	2.0E2
	07A040	Acetaldehyde	1.8E5(100)	...	2.7E6	...	5.4E5	...
	07A060	Acrolein	2.5E2(0.1)	9.4E1	3.8E3	1.0E2	7.5E2	2.0E1
	07A080	Propionaldehyde	3.6E4	...	5.4E5	1.0E4	1.1E5	2.0E3
	07A100	Butyraldehyde	1.1E5	...	1.7E6	1.0E2	3.3E5	2.0E1
	07A120	Methylbutanals	3.9E5	...	5.9E6	1.0E3	1.2E6	2.0E2
	07A121	*2-Methylbutanal*	3.9E5	...	5.9E6	1.0E3	1.2E6	2.0E2
	07A122	*3-Methylbutanal*	3.9E5	...	5.9E6	1.0E3	1.2E6	2.0E2
	07A140	Benzaldehyde	5.9E4	...	8.8E5	...	1.8E5	...
07B	07B020	Acetone	5.9E5(250)	...	8.9E6	1.0E5	1.8E6	2.0E4
	07B060	Butanone	5.9E5(200)	...	8.9E6	1.0E5	1.8E6	2.0E4
	07B080	Isophorone	2.5E4(5)	...	3.8E5	...	7.5E4	...
	07B100	Camphor	1.2E4	...	1.8E5	1.1E4	3.6E4	2.2E3
	07B120	Acetophenone	4.1E4	...	6.1E5	1.6E4	1.2E5	3.1E3
	07B160	5,6-Benzo-9-anthrone	...	...	...	...	...	...
	07B180	Carvones	7.4E4	...	1.1E6	...	2.2E5	...
	07B181	*Carvone (d or l)*	7.4E4	...	1.1E6	...	2.2E5	...
	07B182	*Dihydro-(d or l)carvone*	7.4E4	...	1.1E6	...	2.2E5	...
07C	07C020	Tetrachloroacetone	2.3E4	...	3.4E5	...	6.8E4	...
	07C040	Chlorohydroxy benzophenones	...	...	...	...	...	...
	07C041	*2-Chloro-2'-hydroxy benzophenone*	...	...	...	...	...	...
	07C042	*2-Chloro-3'-hydroxy benzophenone*	...	...	...	...	...	...
	07C043	*2-Chloro-4'-hydroxy benzophenone*	...	...	...	...	...	...
	07C044	*2-Chloro-5-hydroxy benzophenone*	...	...	...	...	...	...
	07C045	*3-Chloro-2'-hydroxy benzophenone*	...	...	...	...	...	...
	07C046	*3-Chloro-2-hydroxy benzophenone*	...	...	...	...	...	...
	07C047	*3-Chloro-3'-hydroxy benzophenone*	...	...	...	...	...	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
			Health	Ecology	Health	Ecology	Health	Ecology
07C	07C048	*3-Chloro-4'-hydroxy* benzophenone	...	...	...	...	...	...
	07C049	*3-Chloro-4-hydroxy* benzophenone	...	...	...	...	...	...
	07C04A	*4-Chloro-2-hydroxy* benzophenone	...	...	...	...	...	...
	07C04B	*4-Chloro-2'-hydroxy* benzophenone	...	...	...	...	...	...
	07C04C	*4-chloro-3'-hydroxy* benzophenone	...	...	...	...	...	...
	07C04D	*4-Chloro-4'-hydroxy* benzophenone	...	...	...	...	...	...
	07C04E	*5-Chloro-2-hydroxy*						
08A	08A020	Formic acid	9.0E3(5)	...	1.4E5	...	2.8E4	...
	08A040	Acetic acid	2.5E4(10)	...	3.8E5	1.0E3	7.6E4	2.0E2
	08A060	Maleic acid	3.2E4(0.25)	...	4.8E5	...	9.6E4	...
	08A080	Valeric acid	2.3E4	...	3.4E5	7.7E3	6.8E4	1.5E3
	08A100	Saturated long chain acids (MW:116-201)	5.8E3	...	8.7E4	8.8E3	1.7E4	1.8E3
	08A101	*Caproic acid*	5.8E3	...	8.7E4	8.8E3	1.7E4	1.8E3
	08A102	*Caprylic acid*	5.8E3	...	8.7E4	8.8E3	1.7E4	1.8E3
	08A103	*Capric acid*	5.8E3	...	8.7E4	8.8E3	1.7E4	1.8E3
	08A104	*Lauric acid*	5.8E3	...	8.7E4	8.8E3	1.7E4	1.8E3
	08A120	Saturated long chain acids (MW:228-285)	1.0E3	...	1.6E4	...	3.1E3	...
	08A121	*Myristic acid*	1.0E3	...	1.6E4	...	3.1E3	...
	08A122	*Palmitic acid*	1.0E3	...	1.6E4	...	3.1E3	...
	08A123	*Stearic acid*	1.0E3	...	1.6E4	...	3.1E3	...
	08A140	Oleic acid	3.3E3	...	5.0E4	2.1E4	1.0E4	4.1E3
	08A160	Benzoic acid	1.4E5	...	2.1E6	...	4.2E5	...
	08A180	Adipic acid	1.6E5	...	2.4E6	9.7E3	4.9E5	1.9E3
	08A200	Phthalic acid	2.1E5	...	3.1E6	...	6.2E5	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air µg/m^3 (ppm)		Water µg/l		Solid Waste µg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
07C	07C048	*3-Chloro-4'-hydroxy* benzophenone	...	...	...	...	...	...
	07C049	*3-Chloro-4-hydroxy* benzophenone	...	...	...	...	...	...
	07C04A	*4-Chloro-2-hydroxy* benzophenone	...	...	...	...	...	...
	07C04B	*4-Chloro-2'-hydroxy* benzophenone	...	...	...	...	...	...
	07C04C	*4-chloro-3'-hydroxy* benzophenone	...	...	...	...	...	...
	07C04D	*4-Chloro-4'-hydroxy* benzophenone	...	...	...	...	...	...
	07C04E	*5-Chloro-2-hydroxy*						
08A	08A020	Formic acid	9.0E3(5)	...	1.4E5	...	2.8E4	...
	08A040	Acetic acid	2.5E4(10)	...	3.8E5	1.0E3	7.6E4	2.0E2
	08A060	Maleic acid	3.2E4(0.25)	...	4.8E5	...	9.6E4	...
	08A080	Valeric acid	2.3E4	...	3.4E5	7.7E3	6.8E4	1.5E3
	08A100	Saturated long chain acids (MW:116-201)	5.8E3	...	8.7E4	8.8E3	1.7E4	1.8E3
	08A101	*Caproic acid*	5.8E3	...	8.7E4	8.8E3	1.7E4	1.8E3
	08A102	*Caprylic acid*	5.8E3	...	8.7E4	8.8E3	1.7E4	1.8E3
	08A103	*Capric acid*	5.8E3	...	8.7E4	8.8E3	1.7E4	1.8E3
	08A104	*Lauric acid*	5.8E3	...	8.7E4	8.8E3	1.7E4	1.8E3
	08A120	Saturated long chain acids (MW:228-285)	1.0E3	...	1.6E4	...	3.1E3	...
	08A121	*Myristic acid*	1.0E3	...	1.6E4	...	3.1E3	...
	08A122	*Palmitic acid*	1.0E3	...	1.6E4	...	3.1E3	...
	08A123	*Stearic acid*	1.0E3	...	1.6E4	...	3.1E3	...
	08A140	Oleic acid	3.3E3	...	5.0E4	2.1E4	1.0E4	4.1E3
	08A160	Benzoic acid	1.4E5	...	2.1E6	...	4.2E5	...
	08A180	Adipic acid	1.6E5	...	2.4E6	9.7E3	4.9E5	1.9E3
	08A200	Phthalic acid	2.1E5	...	3.1E6	...	6.2E5	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

			Air µg/m^3 (ppm)		Water µg/l		Solid Waste µg/g	
Category	MEG No.	Pollutant	Health	Ecology	Health	Ecology	Health	Ecology
08B	08B020	Hydroxyacetic acid	2.5E4	...	3.8E5	...	7.6E4	...
	08B040	Hydroxybenzoic acid	4.0E4	...	6.0E5	...	1.2E5	...
	08B041	*2-Hydroxybenzoic acid*	4.0E4	...	6.0E5	...	1.2E5	...
	08B042	*3-Hydroxybenzoic acid*	4.0E4	...	6.0E5	...	1.2E5	...
	08B043	*4-Hydroxybenzoic acid*	4.0E4	...	6.0E5	...	1.2E5	...
	08B060	β-Propiolactone	3.2E2	...	4.8E3	1.0E4	9.5E2	2.0E3
	08B080	γ-Butyrolactone	3.6E4	...	5.4E5	1.0E5	1.1E5	2.0E4
	08B100	6-Aminohexanoic acid	4.5E4	...	6.8E5	...	1.4E5	...
08C	08C020	Formamide	3.0E4(20)	...	4.5E5	...	9.0E4	...
	08C040	Acetamide	1.4E6	...	2.0E7	...	4.1E6	...
	08C060	6-Hexanelactam	1.0E3(0.22)	...	1.5E4	...	3.0E3	...
08D	08D020	Methyl acetate	6.1E5(200)	...	9.2E6	1.0E4	1.8E3	2.0E3
	08D040	Ethyl acetate	1.4E6(400)	...	2.1E7	1.0E4	4.2E6	2.0E3
	08D060	Ethyl acrylate	1.0E5	...	1.5E6	1.0E4	3.0E5	2.0E3
	08D080	Methyl methacrylate	1.4E4	...	2.1E5	1.0E4	4.2E4	2.0E3
	08D100	Propyl acetates	8.4E5	...	1.3E7	1.0E4	2.6E6	2.0E3
	08D101	*n-Propyl acetate*	8.4E5	...	1.3E7	1.0E4	2.6E6	2.0E3
	08D102	*Isopropyl acetate*	8.4E5	...	1.3E7	1.0E4	2.6E6	2.0E3
	08D120	Butyl acetates	7.0E5	...	1.1E7	1.0E3	2.1E6	2.0E2
	08D121	*n-Butyl acetate*	7.0E5	...	1.1E7	1.0E3	2.1E6	2.0E2
	08D122	*sec-Butyl acetate*	7.0E5	...	1.1E7	1.0E3	2.1E6	2.0E2
	08D123	*Isobutyl acetate*	7.0E5	...	1.1E7	1.0E3	2.1E6	2.0E2
	08D140	Amyl acetates	5.2E5	...	7.9E6	1.0E3	1.6E6	2.0E2
	08D141	*n-Amyl acetate*	5.2E5	...	7.9E6	1.0E3	1.6E6	2.0E2
	08D142	*sec-Amyl acetate*	5.2E5	...	7.9E6	1.0E3	1.6E6	2.0E2
	08D143	*Isoamyl acetate*	5.2E5	...	7.9E6	1.0E3	1.6E6	2.0E2
	08D160	Methyl benzoate	6.1E4	...	9.1E5	...	1.8E5	...
	08D180	Phenyl benzoate	...	...	...	...	...	...
	08D200	Diethyl adipate	7.2E4	...	1.1E6	...	2.2E5	...
	08D220	Dibutyl adipate	5.8E5	...	8.7E6	...	1.7E6	...
	08D240	Di-2-ethylbutyl adipate	2.5E5	...	3.8E6	...	7.6E6	...
	08D260	Di-2-ethylhexyl adipate	4.1E5	...	6.2E6	...	1.2E6	...
	08D280	Phthalate esters (MW:194-279)	5.0E3	...	7.5E4	1.5E0	1.5E4	8.0E-1
	08D281	*Dimethyl phthalate*	5.0E3	...	7.5E4	1.5E0	1.5E4	8.0E-1
	08D282	*Diethyl phthalate*	5.0E3	...	7.5E4	1.5E0	1.5E4	8.0E-1
	08D283	*Di-n-butyl phthalate*	5.0E3	...	7.5E4	1.5E0	1.5E4	8.0E-1
	08D300	Di-2-ethylhexyl phthalate	5.0E3(0.31)	...	7.5E4	...	1.5E4	...
	08D320	Butyl benzyl phthalate	1.4E5	...	2.1E6	1.0E5	4.3E5	2.0E4

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air μg/m^3 (ppm)		Water μg/l		Solid Waste μg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
09A	09A020	Acetonitrile	3.4E4(20)	...	5.1E5	1.0E5	1.0E5	2.0E4
	09A040	Acrylonitrile	4.5E3(20)	...	6.8E4	1.0E3	1.4E4	2.0E5
	09A060	1-Cyanoethane	1.4E4(6)	...	2.1E5	...	4.2E4	...
	09A080	Butyronitrile	2.3E4	...	3.3E5	...	6.6E4	...
	09A100	1,3-Dicyano-1-hydroxy-butane	2.2E4	...	3.3E5	...	6.6E4	...
	09A120	Tetramethylsuccinonitrile	3.0E3	...	4.5E4	...	9.0E3	...
09B	09B020	Benzonitrile	3.2E4	...	4.9E5	7.8E3	9.8E4	1.6E3
	09B040	Naphthonitriles	3.2E4	...	4.9E5	7.8E3	9.8E4	1.6E3
	09B041	*α-Naphthonitriles*	3.2E4	...	4.9E5	7.8E3	9.8E4	1.6E3
	09B042	*β-Naphthonitriles*	3.2E4	...	4.9E5	7.8E3	9.8E4	1.6E3
10A	10A020	Methylamine	1.2E4(10)	...	1.8E5	1.0E3	...	...
	10A040	Ethylamine	1.8E4(10)	...	2.7E5	1.0E3	5.4E4	2.0E2
	10A060	Ethanolamine	6.0E3(3)	...	9.0E4	1.0E4	1.8E4	2.0E3
	10A080	1,2-Diaminoethane	2.5E4	...	3.8E5	1.0E3	7.5E4	2.0E2
	10A100	1-Aminopropane	9.0E3	...	1.4E5	1.0E3	2.7E4	2.0E2
	10A110	3-Aminopropene	4.8E3	...	7.2E4	...	1.4E4	...
	10A120	Propanolamines	3.6E4	...	5.4E5	...	1.1E5	...
	10A121	*2-Amino-1-propanol*	3.6E4	...	5.4E5	...	1.1E5	...
	10A122	*3-Amino-1-propanol*	3.6E4	...	5.4E5	...	1.1E5	...
	10A123	*1-Amino-2-propanol*	3.6E4	...	5.4E5	...	1.1E5	...
	10A140	Butylamines	1.5E4(5)	...	2.3E5	1.0E5	4.5E4	2.0E4
	10A141	*1-Aminobutane*	1.5E4(5)	...	2.3E5	1.0E5	4.5E4	2.0E4
	10A142	*2-Aminobutane*	1.5E4(5)	...	2.3E5	1.0E5	4.5E4	2.0E4
	10A143	*2-Amino-2-methylpropane*	1.5E4(5)	...	2.3E5	1.0E5	4.5E4	2.0E4
	10A160	Cyclohexylamine	4.0E4(10)	...	6.0E5	1.0E4	1.2E5	2.0E3
10B	10B020	Ethyleneimine	3.3E2	...	5.0E3	...	1.0E3	...
	10B040	Dimethylamine	1.8E4(10)	...	2.7E5	1.0E3	...	...
	10B060	Ethylmethylamine	1.8E4(10)	...	2.7E5	1.0E3	5.4E4	2.0E2
	10B080	Diethylamine	7.5E4(25)	...	1.1E6	1.0E3	2.3E5	2.0E2
	10B100	Morpholine	7.0E4(26)	...	1.0E6	1.0E4	2.1E5	2.0E3

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
			Health	Ecology	Health	Ecology	Health	Ecology
10C	10C020	Aniline	1.9E4(5)	...	2.9E5	1.0E3	5.7E4	2.0E2
	10C040	Aminotoluenes	1.1E2	...	1.7E3	...	3.3E2	...
	10C041	*2-Aminotoluene*	1.1E2	...	1.7E3	...	3.3E2	...
	10C042	*3-Aminotoluene*	1.1E2	...	1.7E3	...	3.3E2	...
	10C043	*4-Aminotoluene*	1.1E2	...	1.7E3	...	3.3E2	...
	10C060	Dimethylanilines	2.5E4(5)	...	3.8E5	...	7.5E4	...
	10C061	*2,3-Xylidine*	2.5E4(5)	...	3.8E5	...	7.5E4	...
	10C062	*2,4-Xylidine*	2.5E4(5)	...	3.8E5	...	7.5E4	...
	10C063	*2,5-Xylidine*	2.5E4(5)	...	3.8E5	...	7.5E4	...
	10C064	*2,6-Xylidine*	2.5E4(5)	...	3.8E5	...	7.5E4	...
	10C065	*3,4-Xylidine*	2.5E4(5)	...	3.8E5	...	7.5E4	...
	10C066	*3,5-Xylidine*	2.5E4(5)	...	3.8E5	...	7.5E4	...
	10C080	Anisidines	5.0E2(0.1)	...	7.5E3	...	1.5E3	...
	10C081	*o-Anisidine*	5.0E2(0.1)	...	7.5E3	...	1.5E3	...
	10C082	*m-Anisidine*	5.0E2(0.1)	...	7.5E3	...	1.5E3	...
	10C083	*p-Anisidine*	5.0E2(0.1)	...	7.5E3	...	1.5E3	...
	10C100	1,4-Diaminobenzene	1.0E2(0.02)	...	1.5E3	...	3.0E2	...
	10C120	4-Aminobiphenyl	1.3E3	...	2.0E4	...	4.0E3	...
	10C140	Benzidine	1.0E3	...	1.5E4	1.0E2	2.0E3	2.0E1
	10C160	3,3'-Dichlorobenzidine	6.4E4	...	9.6E5	...	1.9E5	...
	10C180	4,4'-Methylene bis (2-chloroaniline)	2.2E2	...	3.3E3	...	6.5E2	...
	10C200	1-Aminonaphthalene	5.6E2	...	8.5E3	1.0E2	1.7E3	2.0E1
	10C220	2-Aminonaphthalene	1.7E2	...	2.5E3	1.0E2	5.0E2	2.0E1
10D	10D020	N,N-Dimethylaniline	2.5E4(5)	...	3.8E5	...	7.5E4	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air μg/m³ (ppm)		Water μg/l		Solid Waste μg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
11A	11A020	Diazomethane	4.0E2(0.2)	...	6.0E3	...	...	...
	11A040	p-Dimethylaminoazobenzene	2.0E3	...	3.0E4	...	6.0E3	...
11B	11B020	Monomethylhydrazine	1.5E2(0.1)	...	2.3E3	...	4.5E2	...
	11B040	N,N-Dimethylhydrazine	1.5E2(0.075)	5.0E4	2.3E3	...	4.5E2	...
	11B060	N,N'-Dimethylhydrazine	3.2E1	...	5.0E2	...	1.0E2	...
	11B080	1,2-Diphenylhydrazine	1.4E4	...	2.0E5	...	4.0E4	...
12A	12A020	N-Nitrosodimethylamine	6.5E1	...	1.0E3	...	2.0E3	...
	12A040	N-Nitrosodiethylamine	1.2E2	...	1.8E3	...	3.6E2	...
	12A060	N-Nitrosodipropylamine	2.4E3	...	3.6E4	...	7.2E4	...
	12A080	N-Nitrosodiisopropylamine	3.8E4	...	5.7E5	...	1.1E5	...
	12A100	N-Nitrosodipentylamine	7.9E4	...	1.2E6	...	2.4E5	...
12B	12B020	N-Methyl-N-nitrosoaniline	1.3E3	...	1.9E4	...	3.9E3	...
	12B040	N-Nitrosodiphenylamine	1.7E4	...	2.5E5	...	5.0E4	...
13A	13A020	Methanethiol	1.0E3(0.5)	...	1.5E4	...	...	...
	13A040	Ethanethiol	1.0E3(0.5)	...	1.5E4	...	3.0E3	...
	13A060	Propanethiols	8.1E4	...	1.2E6	...	2.4E5	...
	13A061	*Propane-1-thiol*	8.1E4	...	1.2E6	...	2.4E5	...
	13A062	*Propane-2-thiol*	8.1E4	...	1.2E6	...	2.4E5	...
	13A080	n-Butanethiol	1.5E3(0.5)	...	2.3E4	...	4.5E3	...
	13A100	Benzenethiol	5.0E2	...	7.5E3	...	1.5E3	...
	13A120	Anthracenethiols	...	...	...	...	...	...
	13A121	*2-Anthracenethiol*	...	...	...	...	...	...
	13A122	*9-Anthracenethiol*	...	...	...	...	...	...
	13A140	Perchloromethanethiol	8.0E2(0.1)	...	1.2E4	...	...	...
13B	13B020	Dimethyl sulfide	2.4E4	...	3.6E5	...	7.2E4	...
	13B040	Diethyl sulfide	9.0E4	...	1.4E6	...	2.7E5	...
	13B060	Diphenyl sulfide	9.6E4	...	1.4E6	...	2.9E5	...
	13B080	Methyl disulfide	9.0E4	...	1.4E6	...	2.7E5	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

			Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
Category	**MEG No.**	**Pollutant**	**Health**	**Ecology**	**Health**	**Ecology**	**Health**	**Ecology**
14A	14A020	Benzenesulfonic acid	4.0E4	...	6.0E5	...	1.2E5	...
	14A040	Anthraquinoline-disulfonic acids	1.4E5	...	2.2E6	...	4.3E5	...
	14A041	*9,10-Anthraquinone-1,5-disulfonic acid*	1.4E5	...	2.2E6	...	4.3E5	...
	14A042	*9,10-Anthraquinone-1,6-disulfonic acid*						
	14A043	*9,10-Anthraquinone-1,7-disulfonic acid*	1.4E5	...	2.2E6	...	4.3E5	...
	14A044	*9,10-Anthraquinone-1,8-disulfonic acid*	1.4E5	...	2.2E6	...	4.3E5	...
14B	14B020	Dimethyl sulfoxide	8.1E2	...	1.2E4	...	2.4E3	...
15A	15A020	Benzene	3.0E3	7.3E2(0.2)	4.5E4	1.0E3	9.0E3	2.0E2
	15A040	Toluene	3.8E5(100)	4.6E3(1.2)	5.6E6	1.0E3	1.1E6	2.0E2
	15A060	Ethyl benzene	4.4E5(100)	...	6.5E6	1.0E3	1.3E6	2.0E2
	15A080	Styrene	4.2E5(100)	...	6.3E6	1.0E3	1.3E6	2.0E2
	15A100	Propyl benzene	2.5E5	...	3.75E6	1.0E3	7.5E5	2.0E2
	15A120	Isopropyl benzene	2.5E5(50)	1.2E3(0.25)	3.75E6	1.0E3	7.5E5	2.0E2
	15A140	Butyl benzenes	1.0E5	...	1.5E6	...	3.0E5	...
	15A141	*n-Butyl benzene*	1.0E5	...	1.5E6	...	3.0E5	...
	15A142	*sec-Butyl benzene*	1.0E5	...	1.5E6	...	3.0E5	...
	15A143	*tert-Butyl benzene*	1.0E5	...	1.5E6	...	3.0E5	...
	15A160	Biphenyl	1.0E3(0.2)	...	1.5E4	...	3.0E3	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air µg/m³ (ppm)		Water µg/l		Solid Waste µg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
15B	15B020	Indan	2.3E5	...	3.4E6	1.4E3	6.8E5	2.8E2
	15B060	4,4'-Diphenylbiphenyl	2.0E3(0.2)	...	3.0E4	...	6.0E3	...
	15B080	Xylenes	4.4E5(100)	...	6.5E6	1.0E3	1.3E6	2.0E2
	15B081	o-*Xylene*	4.4E5(100)	...	6.5E6	1.0E3	1.3E6	2.0E2
	15B082	m-*Xylene*	4.4E5(100)	...	6.5E6	1.0E3	1.3E6	2.0E2
	15B083	p-*Xylene*	4.4E5(100)	...	6.5E6	1.0E3	1.3E6	2.0E2
	15B100	Dialkyl benzenes(MW:134-	4.4E5	...	6.5E6	1.0E3	1.3E6	2.0E2
	15B101	o-*Diethyl benzene* 191)	4.4E5	...	6.5E6	1.0E3	1.3E6	2.0E2
	15B102	m-*Diethyl benzene*	4.4E5	...	6.5E6	1.0E3	1.3E6	2.0E2
	15B103	p-*Diethyl benzene*	4.4E5	...	6.5E6	1.0E3	1.3E6	2.0E2
	15B104	o-*Diisopropyl benzene*	4.4E5	...	6.5E6	1.0E3	1.3E6	2.0E2
	15B105	m-*Diisopropyl benzene*	4.4E5	...	6.5E6	1.0E3	1.3E6	2.0E2
	15B106	*1,4-Di-tert-butyl benzene*	4.4E5	...	6.5E6	1.0E3	1.3E6	2.0E2
	15B120	Tetrahydronaphthalene	1.3E5	...	2.0E6	1.0E3	4.0E5	2.0E2
	15B140	Dihydronaphthalenes	1.3E5	...	1.9E6	...	3.8E5	...
	15B141	*1,2-Dihydronaphthalene*	1.3E5	...	1.9E6	...	3.8E5	...
	15B142	*1,4-Dihyrdonaphthalene*	1.3E5	...	1.9E6	...	3.8E5	...
	15B160	Terphenyls	9.0E3(1)	...	1.4E5	...	2.7E4	...
	15B161	o-*Terphenyl*	9.0E3(1)	...	1.4E5	...	2.7E4	...
	15B162	m-*Terphenyl*	9.0E3(1)	...	1.4E5	...	2.7E4	...
	15B163	p-*Terphenyl*	9.0E3(1)	...	1.4E5	...	2.7E4	...
	15B180	Trimethylbenzenes	1.2E5(25)	...	1.8E6	...	3.6E5	...
	15B181	*1,2,3-Trimethylbenzene*	1.2E5(25)	...	1.8E6	...	3.6E5	...
	15B182	*1,2,4-Trimethylbenzene*	1.2E5(25)	...	1.8E6	...	3.6E5	...
	15B183	*1,3,5-Trimethylbenzene*	1.2E5(25)	...	1.8E6	...	3.6E5	...
	15B200	Tetramethylbenzenes	1.2E5	...	1.8E6	1.0E4	3.6E5	2.0E3
	15B201	*1,2,3,4-Tetramethylbenzene*	1.2E5	...	1.8E6	1.0E4	3.6E5	2.0E3
	15B202	*1,2,3,5-Tetramethylbenzene*	1.2E5	...	1.8E6	1.0E4	3.6E5	2.0E3
	15B203	*1,2,4,5-Tetramethylbenzene*	1.2E5	...	1.8E6	1.0E4	3.6E5	2.0E3

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
			Health	Ecology	Health	Ecology	Health	Ecology
16A	16A020	Chlorobenzene	3.5E5(75)	...	5.3E6	1.0E2	1.1E6	2.0E1
	16A040	Bromobenzene	4.9E5(75)	...	7.3E6	1.0E2	1.5E6	2.0E1
	16A060	Dibromobenzenes	4.8E5	...	7.2E6	1.0E2	1.4E6	2.0E1
	16A061	*1,2-Dibromobenzene*	4.8E5	...	7.2E6	1.0E2	1.4E6	2.0E1
	16A062	*1,3-Dibromobenzene*	4.8E5	...	7.2E6	1.0E2	1.4E6	2.0E1
	16A063	*1,4-Dibromobenzene*	4.8E5	...	7.2E6	1.0E2	1.4E6	2.0E1
	16A080	Bromochlorobenzenes	3.9E5(50)	...	5.9E6	1.0E2	1.2E6	2.0E1
	16A081	*1-Bromo-2-chlorobenzene*	3.9E5(50)	...	5.9E6	1.0E2	1.2E6	2.0E1
	16A082	*1-Bromo-3-chlorobenzene*	3.9E5(50)	...	5.9E6	1.0E2	1.2E6	2.0E1
	16A083	*1-Bromo-4-chlorobenzene*	3.9E5(50	...	5.9E6	1.0E2	1.2E6	2.0E1
	16A100	1,2-Dichlorobenzene	3.0E5(50)	...	4.5E6	1.0E2	9.0E5	2.0E1
	16A120	1,3-Dichlorobenzene	3.0E5	...	4.5E6	1.0E2	9.0E5	2.0E1
	16A140	1,4-Dichlorobenzene	4.5E5(75)	...	6.8E6	1.0E2	1.4E6	2.0E1
	16A160	Polychlorinated benzenes	1.2E4	...	1.8E5	1.0E2	3.5E4	2.0E1
	16A161	*1,2,4-Trichlorobenzene*	1.2E4	...	1.8E5	1.0E2	3.6E4	2.0E1
	16A162	*Hexachlorobenzene*	1.2E4	...	1.8E5	1.0E2	3.6E4	2.0E1
	16A180	2-Chlorotoluene	2.5E5(50)	...	3.8E6	...	7.5E5	...
	16A200	Chloronaphthalenes	6.9E4	...	1.0E6	...	2.1E5	...
	16A201	*1-Chloronaphthalene*	6.9E4	...	1.0E6	...	2.1E5	...
	16A202	*2-Chloronaphthalene*	6.9E4	...	1.0E6	...	2.1E5	...
	16A220	Polychlorinated biphenyls	1.0E0	...	5.0E-3	5.0E-3	1.0E-3	1.0E-3
16B	16B020	α-Chlorotoluene	5.0E3	...	7.5E4	1.0E2	1.5E4	2.0E1
	16B040	bis(Chloromethyl)-benzenes	6.9E3(1.0)	...	1.0E5	1.0E2	2.1E4	2.0E1
	16B041	*1,2-bis(Chloromethyl)-benzene*	6.9E3(1.0)	...	1.0E5	1.0E2	2.1E4	2.0E1
	16B042	*1,3-bis(Chloromethyl)-benzene*	6.9E3(1.0)	...	1.0E5	1.0E2	2.1E4	2.0E1
	16B043	*1,4-bis(Chloromethyl)-benzene*	6.9E3(1.0)	...	1.0E5	1.0E2	2.1E4	2.0E1

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
			Health	Ecology	Health	Ecology	Health	Ecology
17A	17A020	Nitrobenzene	5.0E3(1)	...	7.5E4	1.0E3	1.5E4	2.0E2
	17A040	Nitrotoluenes	3.0E4(5)	...	4.5E5	1.0E3	9.0E4	2.0E2
	17A041	*2-Nitrotoluene*	3.0E4(5)	...	4.5E5	1.0E3	9.0E4	2.0E2
	17A042	*3-Nitrotoluene*	3.0E4(5)	...	4.5E5	1.0E3	9.0E4	2.0E2
	17A043	*4-Nitrotoluene*	3.0E4(5)	...	4.5E5	1.0E3	9.0E4	2.0E2
	17A060	4-Nitrobiphenyl	1.3E3	...	2.0E4	...	4.0E3	...
	17A080	Dinitrotoluenes	1.5E3	...	2.3E4	1.0E3	4.5E3	2.0E2
	17A081	*2,6-Dinitrotoluene*	1.5E3	...	2.3E4	1.0E3	4.5E3	2.0E2
	17A082	*3,4-Dinitrotoluene*	1.5E3	...	2.3E4	1.0E3	4.5E3	2.0E2
	17A083	*2,3-Dinitrotoluene*	1.5E3	...	2.3E4	1.0E3	4.5E3	2.0E2
	17A084	*2,4-Dinitrotoluene*	1.5E3	...	2.3E4	1.0E3	4.5E3	2.0E2
	17A085	*2,5-Dinitrotoluene*	1.5E3	...	2.3E4	1.0E3	4.5E3	2.0E2
	17A086	*3,5-Dinitrotoluene*	1.5E3	...	2.3E4	1.0E3	4.5E3	2.0E2
17B	17B020	Methoxynitrobenzenes	2.1E5	...	3.2E6	...	6.4E5	...
	17B021	*1-Methoxy-2-nitrobenzene*	2.1E5	...	3.2E6	...	6.4E5	...
	17B022	*1-Methoxy-3-nitrobenzene*	2.1E5	...	3.2E6	...	6.4E5	...
	17B023	*1-Methoxy-4-nitrobenzene*	2.1E5	...	3.2E6	...	6.4E5	...
	17B040	1-Chloro-2-nitrobenzene	1.0E3(0.16)	...	1.5E4	1.0E4	3.0E3	2.0E3
	17B060	1-Chloro-4-nitrobenzene	1.0E3(0.16)	...	1.5E4	1.0E4	3.0E3	2.0E3

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air μg/m^3 (ppm)		Water μg/l		Solid Waste μg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
18A	18A020	Phenol	1.9E4(5)	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A040	Cresols	1.0E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A041	*m-Cresol*	1.0E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A042	*o-Cresol*	1.0E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A043	*p-Cresol*	1.0E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A060	2-Methoxyphenol	3.26E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A080	Ethylphenols	1.0E4(5)	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A081	*o-Ethylphenol*	1.0E4(5)	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A082	*m-Ethylphenol*	1.0E4(5)	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A083	*p-Ethylphenol*	1.0E4(5)	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A100	Phenylphenols	2.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A101	*o-Phenylphenol*	2.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A102	*p-Phenylphenol*	2.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A103	*m-Phenylphenol*	2.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A120	2,2'-Dihydroxydiphenyl	3.5E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A140	Xylenols	1.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A141	*2,3-Xylenol*	1.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A142	*2,4-Xylenol*	1.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A143	*2,5-Xylenol*	1.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A144	*2,6-Xylenol*	1.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A145	*3,5-Xylenol*	1.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A146	*3,4-Xylenol*	1.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A160	Ethyl cresols	2.4E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A161	*6-Ethyl-m-cresol*	2.4E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A162	*4-Ethyl-o-cresol*	2.4E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A163	*2-Ethyl-p-cresol*	2.4E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A180	Polyalkylphenols (MW>135)	5.9E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A181	*2,4,6-Trimethyl phenol*	5.9E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A182	*4,6-Di-tert-butyl-m-cresol*	5.9E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	18A183	*2,6-Dimethyl-4-heptyl-phenol*	5.9E4	...	5.0E0	5.0E2	1.0E0	1.0E2

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
			Health	Ecology	Health	Ecology	Health	Ecology
18B	18B020	Catechol	2.0E4(5)	...	5.0E0	5.0E2	1.0E0	1.0E2
	18B040	1,3-Dihydroxybenzene	4.5E4(10)	...	5.0E0	5.0E2	1.0E0	1.0E2
	18B060	1,4-Dihydroxybenzene	2.0E3	...	5.0E0	5.0E2	1.0E0	1.0E2
	18B080	1,2,3-Trihydroxybenzene	3.6E4	...	5.0E0	5.0E2	1.0E0	1.0E2
18C	18C020	1-Naphthol	1.2E5	...	5.0E0	5.0E2	1.0E0	1.0E2
	18C040	2-Naphthol	1.1E5	...	5.0E0	5.0E2	1.0E0	1.0E2
	18C060	Phenanthrols	...	...	...	...	...	...
	18C061	*1-Hydroxyphenanthrene*	...	...	...	...	...	...
	18C062	*2-Hydroxyphenanthrene*	...	...	...	...	...	...
	18C063	*3-Hydroxyphenanthrene*	...	...	...	...	...	...
	18C064	*4-Hydroxyphenanthrene*	...	...	...	...	...	...
	18C065	*9-Hydroxyphenanthrene*	...	...	...	...	...	...
	18C080	Indanols	1.5E5	...	5.0E0	5.0E2	1.0E0	1.0E2
	18C081	*1-Indanol*	1.5E5	...	5.0E0	5.0E2	1.0E0	1.0E2
	18C082	*4-Indanol*	1.5E5	...	5.0E0	5.0E2	1.0E0	1.0E2
	18C083	*5-Indanol*	1.5E5	...	5.0E0	5.0E2	1.0E0	1.0E2
	18C100	1-Acenaphthol	...	...	...	...	...	...
	18C120	2-Hydroxyfluorene	...	...	...	...	...	...
	18C140	2-Hydroxydibenzofuran	...	...	...	...	...	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm) Health	Air $\mu g/m^3$ (ppm) Ecology	Water $\mu g/l$ Health	Water $\mu g/l$ Ecology	Solid Waste $\mu g/g$ Health	Solid Waste $\mu g/g$ Ecology
19A	19A020	2-Chlorophenol	3.0E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	19A040	2,4-Dichlorophenol	7.0E3	...	5.0E0	5.0E2	1.0E0	1.0E2
	19A050	2,4,6-Trichlorophenol	3.7E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	19A060	Pentachlorophenol	5.0E2	...	5.0E0	2.5E1	1.0E0	5.0E0
19B	19B020	Chlorinated cresols	2.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	19B021	*Chlorinated-o-cresols*	2.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	19B022	*Chlorinated-m-cresols*	2.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	19B023	*Chlorinated-p-cresols*	2.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
20A	20A020	2-Nitrophenol	5.8E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	20A040	3-Nitrophenol	2.0E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	20A060	4-Nitrophenol	1.6E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	20A080	2-Amino-4,6-dinitrophenol	1.4E3	...	5.0E0	1.0E2	1.0E0	2.0E1
	20A100	Dinitrophenols	1.4E3	...	5.0E0	1.0E2	1.0E0	2.0E1
	20A101	*2,4-Dinitrophenol*	1.4E3	...	5.0E0	1.0E2	1.0E0	2.0E1
	20A102	*2,5-Dinitrophenol*	1.4E3	...	5.0E0	1.0E2	1.0E0	2.0E1
	20A103	*2,6-Dinitrophenol*	1.4E3	...	5.0E0	1.0E2	1.0E0	2.0E1
	20A120	2,4,6-Trinitrophenol	1.0E2(0.01)	...	5.0E0	5.0E2	1.0E0	1.0E2
20B	20B020	4,6-Dinitro-o-cresol	2.0E2(0.025)	...	5.0E0	5.0E2	1.0E0	1.0E2
	20B040	Dinitro-p-cresols	2.0E2	...	5.0E0	5.0E2	1.0E0	1.0E2
	20B041	*3,5-Dinitro-p-cresol*	2.0E2	...	5.0E0	5.0E2	1.0E0	1.0E2
	20B042	*2,6-Dinitro-p-cresol*	2.0E2	...	5.0E0	5.0E2	1.0E0	1.0E2

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
			Health	Ecology	Health	Ecology	Health	Ecology
21A	21A020	Naphthalene	5.0E4(10)	...	7.5E5	1.0E2	1.5E5	2.0E1
	21A040	Monoalkyl naphthalenes	2.3E5	...	3.4E6	...	6.8E5	...
	21A041	*1-Methylnaphthalene*	2.3E5	...	3.4E6	...	6.8E5	...
	21A042	*2-Methylnaphthalene*	2.3E5	...	3.4E6	...	6.8E5	...
	21A043	*1-Ethylnaphthalene*	2.3E5	...	3.4E6	...	6.8E5	...
	21A044	*2-Ethylnaphthalene*	2.3E5	...	3.4E6	...	6.8E5	...
	21A060	Phenylnaphthalenes	...	...	...	...	...	...
	21A061	*1-Phenylnaphthalene*	...	...	...	...	...	...
	21A062	*2-Phenylnaphthalene*	...	...	...	...	...	...
	21A080	Dimethylnaphthalenes	2.3E5	...	3.4E6	...	6.8E5	...
	21A081	*1,4-Dimethylnaphthalene*	2.3E5	...	3.4E6	...	6.8E5	...
	21A082	*2,3-Dimethylnaphthalene*	2.3E5	...	3.4E6	...	6.8E5	...
	21A083	*2,6-Dimethylnaphthalene*	2.3E5	...	3.4E6	...	6.8E5	...
	21A100	Acenaphthene	...	...	...	...	...	...
	21A120	Acenaphthylene	...	...	...	...	...	...
	21A140	Anthracene	5.6E4	...	8.4E5	...	1.7E5	...
	21A160	2,7-Dimethylanthracene	...	...	...	...	...	...
	21A180	Phenanthrene	1.6E3	...	2.4E4	...	4.8E3	...
	21A200	Methyl phenanthrenes	...	...	...	...	...	...
	21A201	*1-Methyl phenanthrene*	...	...	...	...	...	...
	21A202	*3-Methyl phenanthrene*	...	...	...	...	...	...
21B	21B020	Naphthacene	...	...	...	...	...	...
	21B040	Benz(a)anthracene	4.5E1	...	6.7E2	...	1.3E2	...
	21B060	7,12-Dimethylbenz(a)-anthracene	2.6E-1	...	3.9E0	...	7.8E-1	...
	21B080	3-Methylcholanthrene	3.8E0	...	5.6E1	...	1.1E1	...
	21B100	Benzo(c)phenanthrene & alkyl derivatives	2.2E2	...	3.4E3	...	6.7E2	...
	21B101	*Benzo(c)phenanthrene*	2.2E2	...	3.4E3	...	6.7E2	...
	21B102	*1-Methyl benzo(c)-phenanthrene*	2.2E2	...	3.4E3	...	6.7E2	...
	21B103	*2-Methyl benzo(c)-phenanthrene*	2.2E2	...	3.4E3	...	6.7E2	...
	21B104	*5-Methyl benzo(c)-phenanthrene*	2.2E2	...	3.4E3	...	6.7E2	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
			Health	Ecology	Health	Ecology	Health	Ecology
19A	19A020	2-Chlorophenol	3.0E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	19A040	2,4-Dichlorophenol	7.0E3	...	5.0E0	5.0E2	1.0E0	1.0E2
	19A050	2,4,6-Trichlorophenol	3.7E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	19A060	Pentachlorophenol	5.0E2	...	5.0E0	2.5E1	1.0E0	5.0E0
19B	19B020	Chlorinated cresols	2.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	19B021	*Chlorinated-o-cresols*	2.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	19B022	*Chlorinated-m-cresols*	2.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	19B023	*Chlorinated-p-cresols*	2.3E4	...	5.0E0	5.0E2	1.0E0	1.0E2
20A	20A020	2-Nitrophenol	5.8E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	20A040	3-Nitrophenol	2.0E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	20A060	4-Nitrophenol	1.6E4	...	5.0E0	5.0E2	1.0E0	1.0E2
	20A080	2-Amino-4,6-dinitrophenol	1.4E3	...	5.0E0	1.0E2	1.0E0	2.0E1
	20A100	Dinitrophenols	1.4E3	...	5.0E0	1.0E2	1.0E0	2.0E1
	20A101	*2,4-Dinitrophenol*	1.4E3	...	5.0E0	1.0E2	1.0E0	2.0E1
	20A102	*2,5-Dinitrophenol*	1.4E3	...	5.0E0	1.0E2	1.0E0	2.0E1
	20A103	*2,6-Dinitrophenol*	1.4E3	...	5.0E0	1.0E2	1.0E0	2.0E1
	20A120	2,4,6-Trinitrophenol	1.0E2(0.01)	...	5.0E0	5.0E2	1.0E0	1.0E2
20B	20B020	4,6-Dinitro-o-cresol	2.0E2(0.025)	...	5.0E0	5.0E2	1.0E0	1.0E2
	20B040	Dinitro-p-cresols	2.0E2	...	5.0E0	5.0E2	1.0E0	1.0E2
	20B041	*3,5-Dinitro-p-cresol*	2.0E2	...	5.0E0	5.0E2	1.0E0	1.0E2
	20B042	*2,6-Dinitro-p-cresol*	2.0E2	...	5.0E0	5.0E2	1.0E0	1.0E2

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
			Health	Ecology	Health	Ecology	Health	Ecology
21B	21B105	*6-Methyl benzo(c)-phenanthrene*	2.2E2	...	3.4E3	...	6.7E2	...
	21B106	*7-Methyl benzo(c)-phenanthrene*	2.2E2	...	3.4E3	...	6.7E2	...
	21B107	*8-Methyl benzo(c)-phenanthrene*	2.2E2	...	3.4E3	...	6.7E2	...
	21B108	*2-Ethyl benzo(c)-phenanthrene*	2.2E2	...	3.4E3	...	6.7E2	...
	21B109	*6-Ethyl benzo(c)-phenanthrene*	2.2E2	...	3.4E3	...	6.7E2	...
	21B10A	*n-Propyl benzo(c)-phenanthrene*	2.2E2	...	3.4E3	...	6.7E2	...
	21B10B	*Isopropyl benzo(c)-phenanthrene*	2.2E2	...	3.4E3	...	6.7E2	...
	21B120	Chrysene	2.2E3	...	3.3E4	...	6.6E3	...
	21B140	Methyl chrysenes	1.8E3	...	2.7E4	...	5.4E3	...
	21B141	*4-Methyl chrysene*	1.8E3	...	2.7E4	...	5.4E3	...
	21B142	*5-Methyl chrysene*	1.8E3	...	2.7E4	...	5.4E3	...
	21B160	Triphenylene	...	...	...	...	...	...
	21B130	Pyrene	2.3E5	...	3.5E6	...	6.9E5	...
	21B200	1-Methylpyrene	...	...	...	...	...	...
	21B220	Dimethylpyrenes	...	...	...	...	...	...
	21B221	*3,4-Dimethylpyrene*	...	...	...	...	...	...
	21B222	*4,5-Dimethylpyrene*	...	...	...	...	...	...
21C	21C020	1,2-Benzonaphthacene	...	...	...	...	...	...
	21C040	Benzo(g)chrysene	1.6E4	...	2.4E5	...	4.8E4	...
	21C060	Dibenz(a,c)anthracene	9.9E3	...	1.5E5	...	3.0E4	...
	21C080	Dibenz(a,h)anthracene	9.3E-2	...	1.4E0	...	2.8E-1	...
	21C100	Benzo(a)pyrene	2.0E-2	...	3.0E-1	...	6.0E-2	...
	21C120	Benzo(e)pyrene	3.0E3	...	4.6E4	...	9.1E3	...
	21C140	Perylene	...	...	...	...	...	...
	21C160	Picene	2.5E3	...	3.8E4	...	7.5E3	...
21D	21D020	Dibenzo(a,h)pyrene	3.7E3	...	5.6E4	...	1.1E4	...
	21D040	Dibenzo(a,i)pyrene	4.3E1	...	6.5E2	...	1.3E2	...
	21D060	Dibenzo(a,l)pyrene	1.1E3	...	1.6E4	...	3.2E3	...
	21D080	Benzo(ghi)perylene	...	...	...	...	...	...
	21D100	Coronene	...	...	...	...	...	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
			Health	Ecology	Health	Ecology	Health	Ecology
22A	22A010	Indene	4.5E4(10)	...	6.8E5	...	1.4E5	...
	22A020	Fluorene	...	...	...	...	...	...
	22A040	Cyclopentanonaphthalene	...	...	...	...	...	...
22B	22B020	2,3-Benzofluorene	...	...	...	...	...	...
	22B040	Fluoranthene	9.0E4	...	1.4E6	...	2.8E5	...
	22B060	1,2-Benzofluorene	...	...	...	...	...	...
	22B080	Cyclopenta(def)phenanthrene	...	...	...	...	...	...
22C	22C020	Benzo(k)fluoranthene	1.6E3	...	2.4E4	...	4.9E3	...
	22C040	Benzo(j)fluoranthene	6.5E3	...	9.8E4	...	2.0E4	...
	22C060	1,2:5,6-Dibenzofluorene	1.3E4	...	2.0E5	...	4.0E4	...
	22C080	Benzo(b)fluoranthene	9.0E2	...	1.3E4	...	2.7E3	...
22D	22D020	Indeno(1,2,3-cd)pyrene	1.6E3	...	2.4E4	...	4.8E3	...
	22D040	Tribenzylene benzene	...	...	...	...	...	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
			Health	Ecology	Health	Ecology	Health	Ecology
23A	23A020	Pyridine	1.5E4	...	2.3E5	1.0E4	4.5E4	2.0E3
	23A040	Picolines	3.6E4	...	5.3E5	...	1.1E5	...
	23A041	*2-Methylpyridine*	3.6E4	...	5.3E5	...	1.1E5	...
	23A042	*3-Methylpyridine*	3.6E4	...	5.3E5	...	1.1E5	...
	23A043	*4-Methylpyridine*	3.6E4	...	5.3E5	...	1.1E5	...
	23A060	Monosubstituted alkyl pyridines	6.9E4	...	1.0E6	1.0E4	2.1E5	2.0E3
	23A061	*2-Ethylpyridine*	6.9E4	...	1.0E6	1.0E4	2.1E5	2.0E3
	23A062	*3-Ethylpyridine*	6.9E4	...	1.0E6	1.0E4	2.1E5	2.0E3
	23A063	*4-Ethylpyridine*	6.9E4	...	1.0E6	1.0E4	2.1E5	2.0E3
	23A064	*4-n-propylpyridine*	6.9E4	...	1.0E6	1.0E4	2.1E5	2.0E3
	23A080	Phenylpyridines	6.9E4	...	1.0E6	1.0E4	2.1E5	2.0E3
	23A081	*2-Phenylpyridine*	6.9E4	...	1.0E6	1.0E4	2.1E5	2.0E3
	23A082	*3-Phenylpyridine*	6.9E4	...	1.0E6	1.0E4	2.1E5	2.0E3
	23A083	*4-Phenylpyridine*	6.9E4	...	1.0E6	1.0E4	2.1E5	2.0E3
	23A100	Chloropyridines	5.9E3	...	8.8E4	...	1.8E4	...
	23A101	*2-Chloropyridine*	5.9E3	...	8.8E4	...	1.8E4	...
	23A102	*3-Chloropyridine*	5.9E3	...	8.8E4	...	1.8E4	...
	23A103	*4-Chloropyridine*	5.9E3	...	8.8E4	...	1.8E4	...
	23A120	Collidines	6.9E4	...	1.0E6	1.0E4	2.1E5	2.0E3
	23A121	*5-Ethyl-2-methylpyridine*	6.9E4	...	1.0E6	1.0E4	2.1E5	2.0E3
	23A122	*2,4,6-Collidine*	6.9E4	...	1.0E6	1.0E4	2.1E5	2.0E3
	23A140	Disubstituted polysubstituted alkyl pyridines	1.8E4	...	2.7E5	...	5.4E4	...
	23A141	*2,3-Dimethylpyridine*	1.8E4	...	2.7E5	...	5.4E4	...
	23A142	*2,4-Dimethylpyridine*	1.8E4	...	2.7E5	...	5.4E4	...
	23A143	*2,5-Dimethylpyridine*	1.8E4	...	2.7E5	...	5.4E4	...
	23A144	*2,6-Dimethylpyridine*	1.8E4	...	2.7E5	...	5.4E4	...
	23A145	*3,4-Dimethylpyridine*	1.8E4	...	2.7E5	...	5.4E4	...
	23A146	*2,3,4,6-Tetramethylpyridine*	1.8E4	...	2.7E5	...	5.4E4	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air µg/m^3 (ppm)		Water µg/l		Solid Waste µg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
23B	23B020	Quinolines	1.6E4	...	2.4E5	...	4.7E4	...
	23B021	*Quinoline*	1.6E4	...	2.4E5	...	4.7E4	...
	23B022	*Isoquinoline*	1.6E4	...	2.4E5	...	4.7E4	...
	23B040	2-Methylquinoline	5.5E4	...	8.3E5	...	1.7E5	...
	23B060	Dimethylquinolines	5.5E4	...	8.3E5	...	1.7E5	...
	23B061	*2,3-Dimethylquinoline*	5.5E4	...	8.3E5	...	1.7E5	...
	23B062	*2,6-Dimethylquinoline*	5.5E4	...	8.3E5	...	1.7E5	...
	23B063	*2,8-Dimethylquinoline*	5.5E4	...	8.3E5	...	1.7E5	...
	23B064	*3,4-Dimethylquinoline*	5.5E4	...	8.3E5	...	1.7E5	...
	23B065	*6,8-Dimethylquinoline*	5.5E4	...	8.3E5	...	1.7E5	...
	23B066	*1,3-Dimethylisoquinoline*	5.5E4	...	8.3E5	...	1.7E5	...
	23B067	*1,5-Dimethylisoquinoline*	5.5E4	...	8.3E5	...	1.7E5	...
	23B080	Acridine	9.0E4	...	1.4E6	5.0E2	2.7E5	1.0E2
	23B100	Dihydroacridine	1.6E2	...	2.5E3	...	4.9E2	...
	23B120	Phenanthridine	9.0E4	...	1.4E6	...	2.7E5	...
	23B140	Benzo(f)quinoline	9.0E4	...	1.4E6	...	2.7E5	...
	23B160	Benzo(h)quinoline	9.0E4	...	1.4E6	...	2.7E5	...
	23B180	Benz(a)acridine	...	...	...	...	...	...
	23B200	Benz(c)acridine	1.1E4	...	1.6E5	...	3.2E4	...
	23B220	Dibenz(a,j)acridine	2.5E2	...	3.7E3	...	7.4E2	...
	23B240	Dibenz(a,h)acridine	2.2E2	...	3.4E3	...	6.7E2	...
	23B260	Dibenz(c,h)acridine	2.3E4	...	3.5E5	...	6.9E4	...
	23B280	2,3-Benz-4-azafluorene	...	...	...	...	...	...
	23B300	Indeno(1,2,3,ij)isoquinoline	...	...	...	...	...	...
23C	23C020	Pyrrole	2.7E3	...	4.1E4	...	8.1E3	...
	23C040	Indole	1.1E4	...	1.7E5	...	3.3E4	...
	23C060	Methylindoles	4.5E4	...	6.8E5	...	1.4E5	...
	23C061	*2-Methylindole*	4.5E4	...	6.8E5	...	1.4E5	...
	23C062	*3-Methylindole*	4.5E5	...	6.8E5	...	1.4E5	...
	23C080	Carbazole	2.3E4	...	3.5E5	...	6.8E4	...
	23C100	Methylcarbazoles	2.3E4	...	3.4E5	...	6.8E4	...
	23C101	*3-Methylcarbazole*	2.3E4	...	3.4E5	...	6.8E4	...
	23C102	*9-Methylcarbazole*	2.3E4	...	3.4E5	...	6.8E4	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air $\mu g/m^3$ (ppm)		Water $\mu g/l$		Solid Waste $\mu g/g$	
			Health	Ecology	Health	Ecology	Health	Ecology
23C	23C120	Benzo(a)carbazole	1.9E4	...	2.8E5	...	5.7E4	...
	23C140	Dibenzo(a,i)carbazole	1.2E4	...	1.8E5	...	3.6E4	...
	23C160	Dibenzo(c,g)carbazole	1.0E2	...	1.5E3	...	3.0E2	...
	23C180	Dibenzo(a,g)carbazole	6.0E3	...	9.0E4	...	1.8E4	...
23D	23D020	Benzothiazole	4.3E3	...	6.4E4	...	1.3E4	...
	23D040	Methyl benzothiazole	4.7E3	...	7.1E4	...	1.4E4	...
24A	24A020	Furan	8.5E6	...	1.3E8	...	2.5E7	...
	24A040	Benzofuran	...	...	...	...	...	...
	24A060	Methylbenzofurans	...	...	...	...	...	...
	24A061	*2-Methylbenzofuran*	...	...	...	...	...	...
	24A062	*3-Methylbenzofuran*	...	...	...	...	...	...
	24A063	*5-Methylbenzofuran*	...	...	...	...	...	...
	24A064	*7-Methylbenzofuran*	...	...	...	...	...	...
24B	24B020	Dibenzofuran	...	...	...	...	...	...
	24B040	Naphthofurans	...	...	...	...	...	...
	24B041	*Naphtho(1,2-b)furan*	...	...	...	...	...	...
	24B042	*Naphtho(2,1-b)furan*	...	...	...	...	...	...
	24B043	*Naphtho(2,3-b)furan*	...	...	...	...	...	...
	24B060	Benzo(b)naphtho(2,3-d)-furan	...	...	...	...	...	...
	24B080	Phenanthro(9,10-b)furan	...	...	...	...	...	...
	24B100	1,9-Benzoxanthene	...	...	...	...	...	...

MINIMUM ACUTE TOXICITY EFFLUENT (MATE) VALUES

Category	MEG No.	Pollutant	Air µg/m^3 (ppm)		Water µg/l		Solid Waste µg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
25A	25A020	Thiophene	4.5E3	...	6.8E4	...	1.4E5	...
	25A040	Methylthiophenes	2.3E4	...	3.4E5	...	7.0E4	...
	25A041	*2-Methylthiophene*	2.3E4	...	3.4E5	...	7.0E4	...
	25A042	*3-Methylthiophene*	2.3E4	...	3.4E5	...	7.0E4	...
	25A060	Dimethylthiophenes	2.6E4	...	3.9E5	...	7.7E4	...
	25A061	*2,3-Dimethylthiophene*	2.6E4	...	3.9E5	...	7.7E4	...
	25A062	*2,4-Dimethylthiophene*	2.6E4	...	3.9E5	...	7.7E4	...
	25A063	*2,5-Dimethylthiophene*	2.6E4	...	3.9E5	...	7.7E4	...
	25A064	*3,4-Dimethylthiophene*	2.6E4	...	3.9E5	...	7.7E4	...
	25A080	Trimethyl and tetramethyl thiophenes	2.9E4	...	4.4E5	...	8.7E4	...
	25A081	*2,3,5-Trimethylthiophene*	2.9E4	...	4.4E5	...	8.7E4	...
25B	25B020	2,2'-Bithiophene	...	...	...	...	...	...
	25B040	Benzo(b)thiophene	2.3E4	...	3.5E5	...	7.0E4	...
	25B060	Dibenzothiophene	...	...	...	...	...	...
	25B080	Benzonaphthothiophenes	...	...	...	...	...	...
	25B081	*Benzo(b)naphtho(2,3-d)-thiophene*	...	...	...	...	...	...
	25B082	*Benzo(b)naphtho(1,2-d)-thiophene*	...	...	...	...	...	...
	25B083	*Benzo(b)naphtho(2,1-d)-thiophene*	...	...	...	...	...	...
26A	26A020	Triethyl phosphate	3.6E4	...	5.4E5	...	1.1E5	...
26B	26B020	Triphenyl phosphate	3.0E3	...	4.5E4	...	9.0E3	...
	26B040	Tritolyl phosphates	1.0E2	...	1.5E3	1.0E2	3.0E2	2.0E1
	26B041	*Tri-o-tolyl phosphate*	1.0E2	...	1.5E3	1.0E2	3.0E2	2.0E1
	26B042	*Tri-m-tolyl phosphate*	1.0E2	...	1.5E3	1.0E2	3.0E2	2.0E1
	26B043	*Tri-p-tolyl phosphate*	1.0E2	...	1.5E3	1.0E2	3.0E2	2.0E1

MOST STRINGENT MATE VALUES FOR EACH SUBCATEGORY

Category	MEG No.	Pollutant	Air µg/m³ (ppm)		Water µg/l		Solid Waste µg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
1A	01A200	Octanes	3.5E5		5.3E6		1.1E6	
	01A020	Methane		6.5E6				
	01A100	Pentanes				1.0E3		2.0E2
	01A160	Cyclohexane				1.0E3		2.0E2
1B	01B220	Dicyclopentadiene	3.0E4		4.5E5	1.0E2	9.0E4	2.0E1
	01B020	Ethylene		1.0E0				
1C	01C040	Propyne	1.7E6		2.5E7			
	01C020	Acetylene		1.1E5				
	01C060	Butynes					6.6E6	
2A	02A380	Hexachlorocyclohexane	5.0E2		2.0E1	2.0E-2	4.0E0	4.0E-3
2B	02B140	Hexachlorocyclopentadiene	1.1E2		1.6E3		3.3E2	
	02B080	Tetrachloroethene				1.0E3		2.0E2
	02B100	Dichloropropenes				1.0E3		2.0E2
3A	03A040	3-Methoxybiphenyl	1.6E5		2.4E6		4.9E5	
	03A020	Isopropyl ether				1.0E4		2.0E3
3B	03B020	1,4-Dioxane	3.6E3		5.4E4		1.1E4	
	03B040	1,3-Dioxane	3.6E3		5.4E4		1.1E4	
4A	04A050	Epichlorhydrin	2.0E3		3.0E4	1.0E3	6.0E3	2.0E2
	04A040	2-Chloro-1,2-epoxypropane	2.0E3		3.0E4	1.0E3	6.0E3	2.0E2
	04A060	1-Chloro-1,3-epoxypropane	2.0E3		3.0E4	1.0E3	6.0E3	2.0E2
4B	04B020	1,1'-Dichloromethyl ether	5.0E0		7.5E1		1.5E1	
	04B040	1,1'-Dichlorodiethyl ether				1.0E4		2.0E3
	04B080	2,2'-Dichlorodiethyl ether				1.0E4		2.0E3
5A	05A140	Benzyl alcohol	5.5E4		8.3E5	1.0E4	1.7E5	2.0E3
	05A060	1-Propanol				1.0E4		2.0E3
	05A100	Isobutyl alcohol				1.0E4		2.0E3
	05A120	Pentanols (primary)				1.0E4		2.0E3
5B	05B100	1-Phenylethanol	1.8E4		2.7E5		5.4E4	
	05B020	2-Propanol				1.0E4		2.0E3
5C	05C040	t-Pentanol	4.5E4		6.8E5	1.0E5	1.4E5	2.0E4
	05C020	t-Butyl alcohol				1.0E5		2.0E4
6A	06A020	Ethylene glycol	1.0E4		1.5E5	1.0E4	3.0E4	2.0E3
6B	06B020	2,3-Epoxy-1-propanol	1.5E5		2.3E6		4.5E5	

MOST STRINGENT MATE VALUES (Continued)

Category	MEG No.	Pollutant	Air μg/m³ (ppm)		Water μg/l		Solid Waste μg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
7A	07A060	Acrolein	2.5E2	9.4E1	3.8E3	1.0E2	7.5E2	2.0E1
7B	07B100	Camphor	1.2E4		1.8E5	1.1E4	3.6E4	2.2E3
7C	07C020	Tetrachloroacetone	2.3E4		3.4E5		6.8E4	
8A	08A120	Saturated long chain acids (MW: 228-285)	1.0E3		1.6E4		3.1E3	
	08A040	Acetic acid				1.0E3		2.0E2
8B	08B060	β-Propiolactone	1.2E2		4.8E3	1.0E4	9.5E2	2.0E3
8C	08C060	6-Hexanelactam	1.0E3		1.5E4		3.0E3	
8D	08D280	Phthalate esters (MW: 194-279)	5.0E3		7.5E4	1.5E0	1.5E4	8.0E-1
9A	09A120	Tetramethylsuccinonitrile	3.0E3		4.5E4		9.0E3	
	09A040	Acrylonitrile				1.0E3		2.0E5
9B	09B020	Benzonitrile	3.2E4		4.9E5	7.8E3	9.8E4	1.6E3
	09B040	Naphthonitriles	3.2E4		4.9E5	7.8E3	9.8E4	1.6E3
10A	10A110	3-Aminopropene	4.8E3		7.2E4		1.4E4	
	10A040	Ethylamine				1.0E3		2.0E2
	10A080	1,2-Diaminoethane				1.0E3		2.0E2
	10A100	1-Aminopropane				1.0E3		2.0E2
10B	10B020	Ethyleneimine	3.3E2		5.0E3		1.0E3	
	10B040	Dimethylamine				1.0E3		
	10B060	Ethylmethylamine				1.0E3		2.0E2
	10B080	Diethylamine				1.0E3		2.0E2
10C	10C100	1,4-Diaminobenzene	1.0E2		1.5E3		3.0E2	
	10C140	Benzidine				1.0E2		2.0E1
	10C200	1-Aminonaphthalene				1.0E2		2.0E1
	10C220	2-Aminonaphthalene				1.0E2		2.0E1
10D	10D020	N,N-Dimethylaniline	2.5E4		3.8E5		7.5E4	
11A	11A020	Diazomethane	4.0E2		6.0E3			
	11A040	p-Dimethylaminobenzene					6.0E3	
11B	11B060	N,N'-Dimethylhydrazine	3.2E1		5.0E2		1.0E2	
12A	12A020	N-Nitrosodimethylamine	6.5E1		1.0E3		2.0E3	
12B	12B020	N-Methyl-N-nitrosoaniline	1.3E3		1.9E4		3.9E3	

MOST STRINGENT MATE VALUES (Continued)

Category	MEG No.	Pollutant	Air μg/m³ (ppm)		Water μg/l		Solid Waste μg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
13A	13A100	Benzenethiol	5.0E2		7.5E3		1.5E3	
13B	13B020	Dimethyl sulfide	2.4E4		3.6E5		7.2E4	
14A	14A020	Benzenesulfonic acid	4.0E4		6.0E5		1.2E5	
14B	14B020	Dimethyl sulfoxide	8.1E2		1.2E4		2.4E3	
15A	15A160	Biphenyl	1.0E3		1.5E4		3.0E3	
	15A020	Benzene				1.0E3		2.0E2
	15A040	Toluene				1.0E3		2.0E2
	15A060	Ethylbenzene				1.0E3		2.0E2
	15A080	Styrene				1.0E3		2.0E2
	15A100	Propyl benzene				1.0E3		2.0E2
	15A120	Isopropyl benzene				1.0E3		2.0E2
15B	15B060	4,4'-Diphenylbiphenyl	2.0E3		3.0E4		6.0E3	
	15B080	Xylenes				1.0E3		2.0E2
	15B100	Dialkyl benzenes (MW: 134-191)				1.0E3		2.0E2
	15B120	Tetrahydronaphthalene				1.0E3		2.0E2
16A	16A220	Polychlorinated biphenyls	1.0E0		5.0E-3	5.0E-3	1.0E-3	1.0E-3
16B	16B020	α-Chlorotoluene	5.0E3		7.5E4	1.0E2	1.5E4	2.0E1
17A	17A060	4-Nitrobiphenyl	1.3E3		2.0E4		4.0E3	
	17A020	Nitrobenzene				1.0E3		2.0E2
	17A040	Nitrotoluenes				1.0E3		2.0E2
	17A080	Dinitrotoluenes				1.0E3		2.0E2
17B	17B040	1-Chloro-2-nitrobenzene	1.0E3		1.5E4	1.0E4	3.0E3	2.0E3
	17B060	1-Chloro-4-nitrobenzene	1.0E3		1.5E4	1.0E4	3.0E3	2.0E3
18A	18A040	Cresols	1.0E4		5.0E0	5.0E2	1.0E0	1.0E2
	18A080	Ethyl phenols	1.0E4		5.0E0	5.0E2	1.0E0	1.0E2
	18A020	Phenol			5.0E0	5.0E2	1.0E0	1.0E2
	18A060	2-Methoxyphenol			5.0E0	5.0E2	1.0E0	1.0E2
	18A100	Phenyl phenols			5.0E0	5.0E2	1.0E0	1.0E2
	18A120	2,2'-Dihydroxydiphenyl			5.0E0	5.0E2	1.0E0	1.0E2
	18A140	Xylenols			5.0E0	5.0E2	1.0E0	1.0E2
	18A160	Ethyl cresols			5.0E0	5.0E2	1.0E0	1.0E2
	18A180	Polyalkyl phenols (MW: >135)			5.0E0	5.0E2	1.0E0	1.0E2
18B	18B060	1,4-Dihydroxybenzene	2.0E3		5.0E0	5.0E2	1.0E0	1.0E2
	18B020	Catechol			5.0E0	5.0E2	1.0E0	1.0E2
	18B040	1,3-Dihydroxybenzene			5.0E0	5.0E2	1.0E0	1.0E2
	18B080	1,2,3-Trihydroxybenzene			5.0E0	5.0E2	1.0E0	1.0E2

MOST STRINGENT MATE VALUES (Continued)

Category	MEG No.	Pollutant	Air µg/m³ (ppm)		Water µg/l		Solid Waste µg/g	
			Health	Ecology	Health	Ecology	Health	Ecology
18C	18C040	2-Naphthol	1.1E5		5.0E0	5.0E2	1.0E0	1.0E2
	18C020	1-Naphthol			5.0E0	5.0E2	1.0E0	1.0E2
	18C080	Indanols			5.0E0	5.0E2	1.0E0	1.0E2
19A	19A060	Pentachlorophenol	5.0E2		5.0E0	2.5E1	1.0E0	5.0E0
	19A020	2-Chlorophenol			5.0E0		1.0E0	
	19A040	2,4-Dichlorophenol			5.0E0		1.0E0	
19B	19B020	Chlorinated cresols	2.3E4		5.0E0	5.0E2	1.0E0	5.0E2
20A	20A120	2,4,6-Trinitrophenol	1.0E2		5.0E0		1.0E0	
	20A020	2-Nitrophenol			5.0E0		1.0E0	
	20A040	3-Nitrophenol			5.0E0		1.0E0	
	20A060	4-Nitrophenol			5.0E0		1.0E0	
	20A080	2-Amino-4,6-dinitrophenol			5.0E0	1.0E2	1.0E0	2.0E1
	20A100	Dinitrophenols			5.0E0	1.0E2	1.0E0	2.0E1
20B	20B020	4,6-Dinitro-o-cresol	2.0E2		5.0E0	5.0E2	1.0E0	1.0E2
	20B040	Dinitro-p-cresols	2.0E2		5.0E0	5.0E2	1.0E0	1.0E2
21A	21A180	Phenanthrene	1.6E3		2.4E4		4.8E3	
21B	21B060	7,12-Dimethylbenz(a)anthracene	2.6E-1		3.9E0		7.8E-1	
21C	21C100	Benz(a)pyrene	2.0E-2		3.0E-1		6.0E-2	
21D	21D040	Dibenz(a,i)pyrene	4.3E1		6.5E2		1.3E2	
22A	22A010	Indene	4.5E4		6.8E5		1.4E5	
22B	22B040	Fluoranthene	9.0E4		1.4E6		2.8E5	
22C	22C080	Benzo(b)fluoranthene	9.0E2		1.3E4		2.7E3	
22D	22D020	Indeno(1,2,3-cd)pyrene	1.6E3		2.4E4		4.8E3	
23A	23A100	Chloropyridines	5.9E3		8.8E4		1.8E4	
	23A020	Pyridine				1.0E4		2.0E3
	23A060	Monosubstituted alkyl pyridines				1.0E4		2.0E3
	23A080	Phenylpyridines				1.0E4		2.0E3
	23A120	Collidines				1.0E4		2.0E3
23B	23B100	Dihydroacridine	1.6E2		2.5E3		4.9E2	
	23B080	Acridine				5.0E2		1.0E2
23C	23C160	Dibenzo(c,g)carbazole	1.0E2		1.5E3		3.0E2	
23D	23D020	Benzothiazole	4.3E3		6.4E4		1.3E4	
24A	24A020	Furan	8.5E6		1.3E8		2.5E7	
24B		No values available						
25A	25A020	Thiophene	4.5E3		6.8E4		1.4E5	
25B	25B040	Benzo(b)thiophene	2.3E4		3.5E5		7.0E4	
26A	26A020	Triethyl phosphate	3.6E4		5.4E5		1.1E5	
26B	26B040	Tritotyl phosphates	1.4E5		2.0E6	1.0E2	4.1E5	2.0E1

APPENDIX E

HAZARD INDICATORS FOR ORGANIC CHEMICALS

This appendix lists hazard potential values for organic MEG compounds. The values have been calculated on the bases of air EPC's and reflect severity of possible human health effects. High values indicate very hazardous chemicals. Hazard indicators (X, XX, or XXX) are assigned to the compounds of high concern based on the calculated potential hazard values. The XXX indicator denotes substances of greatest concern. The hazard indicators appear in the upper right corner of the MEG charts provided in Appendix A (MEG Volumes III and IV).

Compounds and their hazard potential values are listed by MEG category. Only main names, i.e., the preferred name or parent name appearing on a MEG chart in Appendix A, are included. Subspecies are not listed individually. Missing hazard potential values in the listing indicate that data are unavailable to calculate an EPC for air based on health effects.

A list of the 68 organic substances receiving hazard indicators is given following the index of hazard potential values.

Hazard potential values presented in this appendix supplant the values for organics in Appendix D of the 1977 MEGs report, Volume I.*

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*Cleland, J. G., and G. L. Kingsbury. 1977. Multimedia Environmental Goals for Environmental Assessment, Volume I , EPA-600/7-77-136-a.

HAZARD POTENTIAL VALUES FOR ORGANIC CHEMICALS

Identification number	Name	Hazard Potential	Indicator
01A020	METHANE	4	
01A040	ETHANE	4	
01A060	PROPANE	4	
01A080	BUTANES	4	
01A100	PENTANES	4	
01A120	CYCLOPENTANES	4	
01A140	HEXANES	4	
01A160	CYCLOHEXANE	4	
01A180	HEPTANES	4	
01A200	OCTANES	4	
01A220	NONANES	4	
01A240	ALKANES (C=10,11)	4	
01A260	N-DODECANE	4	
01B020	ETHYLENE	4	
01B040	PROPYLENE	4	
01B060	BUTYLENES	4	
01B080	BUTADIENES	4	
01B100	PENTENES	4	
01B120	CYCLOPENTADIENE	4	
01B140	HEXENES	4	
01B160	CYCLOHEXENE	4	
01B180	CYCLOHEXADIENES	4	
01B200	HEPTENES	4	
01B220	DICYCLOPENTADIENE	8	
01C020	ACETYLENE	4	
01C040	PROPYNE	4	
01C060	BUTYNE	4	

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Identification number	Name	Hazard Potential	Indicator
02A020	METHYL BROMIDE	8	
02A040	METHYL CHLORIDE	4	
02A060	METHYL IODIDE	17	X
02A080	METHYLENE CHLORIDE	4	
02A100	CHLOROFORM	11.5	
02A120	BROMODICHLOROMETHANE	8	
02A140	DIBROMOCHLOROMETHANE	8	
02A160	BROMOFORM	12	
02A180	DIBROMODICHLOROMETHANE	12	
02A200	DICHLORODIFLUOROMETHANE	4	
02A220	TRICHLOROFLUOROMETHANE	4	
02A240	CARBON TETRACHLORIDE	11.5	
02A250	ETHYL CHLORIDE	4	
02A260	1,2-DICHLOROETHANE	8	
02A280	1,1,1-TRICHLOROETHANE	4	
02A290	1,1,2-TRICHLOROETHANE	8	
02A300	1,1,2,2-TETRACHLOROETHANE	12	
02A320	HEXACHLOROETHANE	12	
02A340	DICHLOROPROPANES	4	
02A360	BROMOBUTANES	8	
02A380	HEXACHLOROCYCLOHEXANE	16	X
02A400	1-CHLOROOCTANE	-	
02B020	VINYL CHLORIDE	10.5	X*
02B040	1,2-DICHLOROETHENE	4	
02B060	1,1-DICHLOROETHENE	8	
02B070	TRICHLOROETHYLENE	5	
02B080	TETRACHLORETHENE	4	
02B090	1,1-DICHLORO-2,2-DIFLUOROETHYLENE	-	
02B100	DICHLOROPROPENES	12	
02B120	HEXACHLOROBUTADIENE	12	
02B140	HEXACHLOROCYCLOPENTADIENE	16	X

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*In light of the cancer risk associated with vinyl chloride, it is assigned an X indicator.

Identification number	Name	Hazard Potential	Indicator
03A020	ISOPROPYL ETHER	4	
03A040	2-METHOXY BIPHENYL	4	
03A060	TETRAHYDROFURAN	4	
03B020	1,3-DIOXANE	12	
03B040	1,4-DIOXANE	12	
03B060	2-ETHYL-4-METHYL-1,3-DIOXOLANE	4	
04A020	CHLOROMETHYL METHYL ETHER	13	X
04A040	2-CHLORO-1,2-EPOXYPROPANE	12	
04A050	EPICHLORHYDRIN	11.5	
04A060	1-CHLORO-1,3-EPOXYPROPANE	12	
04A080	2-CHLOROETHYLMETHYL ETHER	-	
04A100	CHLOROMETHYL ETHYL ETHER	-	
04A120	2-CHLOROETHYL ETHYL ETHER	12	
04A140	2-CHLOROETHYL VINYL ETHER	12	
04A160	α-CHLOROBUTYL ETHER ETHER	-	
04A180	4-CHLOROPHENYL PHENYL ETHER	8	
04A200	4-BROMOPHENYL PHENYL ETHER	8	
04B020	1,1'-DICHLOROMETHYL ETHER	27.5	XXX
04B040	1,1'-DICHLORODIETHYL ETHER	9	
04B060	1,2-DICHLOROETHYL ETHYL ETHER	-	
04B080	2,2'-DICHLORODIETHYL ETHER	8	
04B100	2,2'-DICHLORODIISOPROPYL ETHER	12	
04B120	1,2-DICHLORODIISOBUTYL ETHER	-	
05A020	METHANOL	5	
05A040	ETHANOL	5	
05A060	1-PROPANOL	5	
05A080	n-BUTANOL	4	
05A100	ISOBUTYL ALCOHOL	4	
05A120	PENTANOLS (Primary)	4	
05A140	BENZYL ALCOHOL	10	
05A160	PHENETHYL ALCOHOL	8	
05B020	2-PROPANOL	4	
05B040	2-BUTANOL	4	

Identification number	Name	Hazard Potential	Indicator
05B060	PENTANOLS (Secondary)	4	
05B080	2,6-DIMETHYL-4-HEPTANOL	5	
05B100	1-PHENYLETHANOL	12	
05B120	BORNEOL	8	
05B140	ISOBORNEOL	8	
05C020	t-BUTYL ALCOHOL	4	
05C040	t-PENTANOL	8	
05C060	α-TERPINEOL	4	
06A020	ETHYLENE GLYCOL	12	
06A040	PROPYLENE GLYCOL	4	
06B020	2,3-EPOXY-1-PROPANOL	4	
07A020	FORMALDEHYDE	15.5	X
07A040	ACETALDEHYDE	4	
07A060	ACROLEIN	16	X
07A080	PROPIONALDEHYDE	8	
07A100	BUTYRALDEHYDE	4	
07A120	3-METHYLBUTANAL	4	
07A140	BENZALDEHYDE	8	
07B020	ACETONE	4	
07B060	BUTANONE	4	
07B080	ISOPHORONE	8	
07B100	CAMPHOR	12	
07B120	ACETOPHENONE	8	
07B160	5,6-BENZO-9-ANTHRONE	-	
07B180	CARVONES	8	
07C020	TETRACHLOROACETONE	8	
07C040	CHLOROHYDROXY BENZOPHENONES	-	
08A020	FORMIC ACID	15	X
08A040	ACETIC ACID	8	
08A060	MALEIC ACID	8	
08A080	VALERIC ACID	8	
08A100	SATURATED LONG CHAIN ACIDS (MW: 116-201)	12	
08A120	SATURATED LONG CHAIN ACIDS (MW: 228-285)	12	

Identification number	Name	Hazard Potential	Indicator
08A140	OLEIC ACID	12	
08A160	BENZOIC ACID	4	
08A180	ADIPIC ACID	4	
08A200	PHTHALIC ACID	5	
08B020	HYDROXYACETIC ACID	8	
08B040	HYDROXYBENZOIC ACIDS	8	
08B060	β-PROPIOLACTONE	15.5	X
08B080	α-BUTYROLACTONE	8	
08B100	6-AMINOHEXANOIC ACID	10	
08C020	FORMAMIDE	10	
08C040	ACETAMIDE	5	
08C060	6-HEXANELACTAM	12	
08D020	METHYL ACETATE	5	
08D040	ETHYL ACETATE	5	
08D060	ETHYL ACRYLATE	5	
08D080	METHYL METHACRYLATE	6	
08D100	PROPYL ACETATES	5	
08D120	BUTYL ACETATES	4	
08D140	AMYL ACETATES	4	
08D160	METHYL BENZOATE	8	
08D180	PHENYL BENZOATE	-	
08D200	DIETHYL ADIPATE	8	
08D220	DIBUTYL ADIPATE	4	
08D240	DI-2-ETHYLBUTYL ADIPATE	4	
08D260	DI-2-ETHYLHEXYL ADIPATE	4	
08D280	PHTHALATE ESTERS (MW: 194-279)	12	
08D300	DI-2-ETHYLHEXYL PHTHALATE	15	X
08D320	BUTYL BENZYL PHTHALATE	4	
09A020	ACETONITRILE	8	
09A040	ACRYLONITRILE	12	
09A060	1-CYANOETHANE	12	
09A080	BUTYRONITRILE	8	
09A100	1,3-DICYANO-1-HYDROXYBUTANE	8	

Identification number	Name	Hazard Potential	Indicator
09A120	TETRAMETHYLSUCCINONITRILE	12	
09B020	BENZONITRILE	8	
09B040	NAPHTHONITRILES	8	
10A020	METHYLAMINE	12	
10A040	ETHYLAMINE	8	
10A060	ETHANOLAMINE	12	
10A080	1,2-DIAMINOETHANE	8	
10A100	1-AMINOPROPANE	12	
10A110	3-AMINOPROPENE	12	
10A120	PROPANOLAMINE	8	
10A140	BUTYLAMINES	12	
10A160	CYCLOHEXYLAMINE	8	
10B020	ETHYLENEIMINE	19.5	XX
10B040	DIMETHYLAMINE	8	
10B060	ETHYLMETHYLAMINE	8	
10B080	DIETHYLAMINE	8	
10B100	MORPHOLINE	8	
10C020	ANILINE	10	
10C040	AMINOTOLUENES	17	X
10C060	DIMETHYLANILINES	8	
10C080	ANISIDINES	16	X
10C100	1,4-DIAMINOBENZENE	16	XX
10C120	4-AMINOBIPHENYL	13	X
10C140	BENZIDINE	15	X
10C160	3,3'-DICHLOROBENZIDINE	6.5	X*
10C180	4,4'-METHYLENE bis(2-CHLOROANILINE)	14	X
10C200	1-AMINONAPHTHALENE	17	X
10C220	2-AMINONAPHTHALENE	17	X
10D020	N,N-DIMETHYLANILINE	10	

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*In light of the cancer risk associated with dichlorobenzidine, it is assigned an X indicator.

Identification number	Name	Hazard Potential	Indicator
11A020	DIAZOMETHANE	22	XX
11A040	p-DIMETHYLAMINOAZOBENZENE	15.5	X
11B020	MONOMETHYLHYDRAZINE	18	X
11B040	N,N-DIMETHYLHYDRAZINE	20	XX
11B060	N,N'-DIMETHYLHYDRAZINE	23.5	XX
11B080	1,2-DIPHENYLHYDRAZINE	15	X
12A020	N-NITROSO-DIMETHYLAMINE	23.5	XX
12A040	N-NITROSO-DIETHYLAMINE	19.5	XX
12A060	N-NITROSO-DIPROPYLAMINE	15.5	X
12A080	N-NITROSO-DIISOPROPYLAMINE	10	
12A100	N-NITROSO-DIPENTYLAMINE	10	
12B020	N-METHYL-N-NITROSO-ANILINE	15.5	X
12B040	N-NITROSO-DIPHENYLAMINE	9	
13A020	METHANETHIOL	12	
13A040	ETHANETHIOL	12	
13A060	PROPANETHIOLS	8	
13A080	N-BUTANETHIOL	12	
13A100	BENZENETHIOL	16	X
13A120	ANTHRACENETHIOLS	-	
13A140	PERCHLOROMETHANETHIOL	20	XX
13B020	DIMETHYL SULFIDE	8	
13B040	DIETHYL SULFIDE	8	
13B060	DIPHENYL SULFIDE	8	
13B080	METHYL DISULFIDE	8	
14A020	BENZENESULFONIC	8	
14A040	ANTHRAQUINONE-DISULFONIC ACIDS	4	
14B020	DIMETHYL SULFOXIDE	14.5	X
15A020	BENZENE	13	X
15A040	TOLUENE	4	
15A060	ETHYL BENZENE	4	
15A080	STYRENE	4	
15A100	PROPYL BENZENE	4	
15A120	ISOPROPYL BENZENE	4	
15A140	n-BUTYL BENZENE	8	

Identification number	Name	Hazard Potential	Indicator
15A160	BIPHENYL	12	
15B020	INDAN	4	
15B060	4,4'-DIPHENYL BIPHENYL	12	
15B080	XYLENES	4	
15B100	DIALKYL BENZENES	4	
15B120	TETRAHYDRONAPHTHALENE	4	
15B140	DIHYDRONAPHTHALENES	4	
15B160	TERPHENYLS	12	
15B180	TRIMETHYL BENZENES	4	
15B200	TETRAMETHYL BENZENES	4	
16A020	CHLOROBENZENE	4	
16A040	BROMOBENZENE	4	
16A060	DIBROMOBENZENES	4	
16A080	BROMOCHLOROBENZENES	4	
16A100	1,2-DICHLOROBENZENE	4	
16A120	1,3-DICHLOROBENZENE	4	
16A140	1,4-DICHLOROBENZENE	4	
16A160	POLYCHLORINATED BENZENES	9	
16A180	2-CHLOROTOLUENE	4	
16A200	CHLORONAPHTHALENES	8	
16A220	POLYCHLORINATED BIPHENYLS	16.5	XX*
16B020	α-CHLOROTOLUENE	11.5	
16B040	bis-(CHLOROMETHYL)-BENZENES	12	
17A020	NITROBENZENE	12	
17A040	NITROTOLUENE	8	
17A060	4-NITROBIPHENYL	13	X
17A080	DINITROTOLUENES	15	X
17B020	METHOXYNITROBENZENE	4	
17B040	1-CHLORO-2-NITROBENZENE	15	X
17B060	1-CHLORO-4-NITROBENZENE	15	X

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*Due to persistence, PCB's are assigned the indicator XX.

Identification number	Name	Hazard Potential	Indicator
18A020	PHENOL	10	
18A040	CRESOLS	15	X
18A060	2-METHOXYPHENOL	10	
18A080	ETHYLPHENOLS	15	X
18A100	PHENYLPHENOLS	5	
18A120	2,2'-DIHYDROXYDIPHENYL	10	
18A140	XYLENOLS	15	X
18A160	ETHYL CRESOLS	10	
18A180	POLYALKYLPHENOLS	10	
18B020	CATECHOL	10	
18B040	1,3-DIHYDROXYBENZENE	10	
18B060	1,4-DIHYDROXYBENZENE	15	X
18B080	1,2,3-TRIHYDROXYBENZENE	10	
18C020	1-NAPHTHOL	5	
18C040	2-NAPHTHOL	10	
18C060	PHENANTHROLS	-	
18C080	INDANOLS	5	
18C100	1-ACENAPHTHOL	-	
18C120	2-HYDROXYFLUORENE	-	
18C140	2-HYDROXYDIBENZOFURAN	-	
19A020	2-CHLOROPHENOL	10	
19A040	2,4-DICHLOROPHENOL	13	
19A050	2,4,6-TRICHLOROPHENOL	10	
19A060	PENTACHLOROPHENOL	18	X
19B020	CHLORINATED CRESOLS	10	
20A020	2-NITROPHENOL	10	
20A040	3-NITROPHENOL	15	X
20A060	4-NITROPHENOL	15	X
20A080	2-AMINO-4,6-DINITROPHENOL	15	X
20A100	DINITROPHENOLS	15	X
20A120	2,4,6-TRINITROPHENOL	20	XX
20B020	4,6-DINITRO-O-CRESOL	20	XX
20B040	DINITRO-p-CRESOLS	20	XX

Identification number	Name	Hazard Potential	Indicator
21A020	NAPHTHALENE	9	
21A040	MONOALKYL NAPHTHALENES	5	
21A060	PHENYL NAPHTHALENES	-	
21A080	DIMETHYL NAPHTHALENES	5	
21A100	ACENAPHTHENE	-	
21A120	ACENAPHTHYLENE	-	
21A140	ANTHRACENE	6	
21A160	2,7-DIMETHYLANTHRACENE	-	
21A180	PHENANTHRENE	1 - 3	X
21A200	METHYL PHENANTHRENES	-	
21B020	NAPHTHACENE	-	
21B040	BENZ(a)ANTHRACENE	26	XXX
21B060	7,12-DIMETHYLBENZ(a)ANTHRACENE	25	XXX
21B080	3-METHYLCHOLANTHRENE	30	XXX
21B100	BENZO(c)PHENANTHRENE & ALKYL DERIVATIVES	18	X
21B120	CHRYSENE	12	
21B140	METHYL CHRYSENES	12	
21B160	TRIPHENYLENE	-	
21B180	PYRENE	6	
21B200	1-METHYLPYRENE	-	
21B220	DIMETHYL PYRENES	-	
21C020	1,2-BENZONAPHTHACENE	-	
21C040	BENZO(g)CHRYSENE	6	
21C060	DIBENZ(a,c)ANTHRACENE	6	
21C080	DIBENZ(a,h)ANTHRACENE	30	XXX
21C100	BENZO(a)PYRENE	27.5	XXX
21C120	BENZO(e)PYRENE	12	
21C140	PERYLENE	-	
21C160	PICENE	12	
21D020	DIBENZO(a,h)PYRENE	12	
21D040	DIBENZO(a,i)PYRENE	24	XX
21D060	DIBENZO(a,l)PYRENE	12	
21D080	BENZO(ghi)PERYLENE	-	
21D100	CORONENE	-	

Identification number	Name	Hazard Potential	Indicator
22A010	INDENE	10	
22A020	FLUORENE	-	
22A040	CYCLOPENTANONAPHTHALENE	-	
22B020	2,3-BENZOFLUORENE	-	
22B040	FLUORANTHENE	10	
22B060	1,2-BENZOFLUORENE	-	
22B080	CYCLOPENTA(def)PHENANTHRENE	6	
22C020	BENZO(k)FLUORANTHENE	12	
22C040	BENZO(j)FLUORANTHENE	12	
22C060	1,2:5,6-DIBENZOFLUORENE	6	
22C080	BENZO(b)FLUORANTHENE	12	
22D020	INDENO(1,2,3,cd)PYRENE	12	
22D040	TRIBENZYLENE BENZENE	-	
23A020	PYRIDINE	15	X
23A040	PICOLINES	10	
23A060	MONOSUBSTITUTED ALKYL PYRIDINES	10	
23A080	PHENYL PYRIDINES	10	
23A100	CHLOROPYRIDINES	15	X
23A120	COLLIDINES	10	
23A140	DISUBSTITUTED POLYSUBSTITUTED ALKYL PYRIDINES	15	X
23B020	QUINOLINE	12	
23B040	2-METHYL QUINOLINE	8	
23B060	DIMETHYL QUINOLINES AND DIMETHYL ISOQUINOLINES	8	
23B080	ACRIDINE	8	
23B100	DIHYDROACRIDINE	16	X
23B120	PHENANTHRIDINE	8	
23B140	BENZO(f)QUINOLINE	8	
23B160	BENZO(h)QUINOLINE	8	
23B180	BENZ(a)ACRIDINE	-	
23B200	BENZ(c)ACRIDINE	6	
23B220	DIBENZ(a,j)ACRIDINE	18	X
23B240	DIBENZ(a,h)ACRIDINE	18	X

Identification number	Name	Hazard Potential	Indicator
23B260	DIBENZ(c,h)ACRIDINE	6	
23B280	2,3-BENZ-4-AZAFLUORENE	-	
23B300	INDENO(1,2,3,ij)ISOQUINOLINE	-	
23C020	PYRROLE	12	
23C040	INDOLE	9	
23C060	METHYLINDOLES	8	
23C080	CARBAZOLE	8	
23C100	METHYLCARBAZOLES	8	
23C120	BENZO(a)CARBAZOLE	6	
23C140	DIBENZO(a,i)CARBAZOLE	6	
23C160	DIBENZO(c,g)CARBAZOLE	18	X
23C180	DIBENZO(a,g)CARBAZOLE	12	
23D020	BENZOTHIAZOLE	12	
23D040	METHYLBENZOTHIAZOLES	12	
24A020	FURAN	-	
24A040	BENZOFURAN	-	
24B020	DIBENZOFURAN	-	
24B040	NAPHTHOFURANS	-	
24B060	BENZO(6)NAPHTHO(2,3-d)FURAN	-	
24B080	PHENANTHRO(9,10-b)FURAN	-	
24B100	1,9-BENZOXANTHENE	-	
25A020	THIOPHENE	12	
25A040	METHYL THIOPHENES	8	
25A060	DIMETHYLTHIOPHENES	8	
25A080	TRIMETHYL & TETRAMETHYL THIOPHENE	8	
25B020	2,2'-BITHIOPHENE	-	
25B040	BENZO(b)THIOPHENE	8	
25B060	DIBENZOTHIOPHENE	-	
25B080	BENZONAPHTHOTHIOPHENE	-	
26A020	TRIETHYL PHOSPHATE	8	
26B020	TRIPHENYL PHOSPHATE	12	
26B040	TRITOLYL PHOSPHATE	16	X

ORGANIC SUBSTANCES RECEIVING HAZARD INDICATORS

X

Methyl iodide
Hexachlorocyclohexane
Vinyl chloride
Hexachlorocyclopentadiene
Chloromethyl methyl ether
Formaldehyde
Acrolein
Formic acid
β-Propiolactone
Di-2-ethylhexyl phthalate
Aminotoluenes
Anisidines
4-Aminobiphenyl
Benzidine
3,3'-Dichlorobenzidine
4,4'-Methylene bis(2-chloroaniline)
1-Aminonaphthalene
2-Aminonaphthalene
p-Dimethylaminoazobenzene
Monomethylhydrazine
1,2-Diphenylhydrazine
N-Nitroso-dipropylamine
N-Methyl-n-nitroso-aniline
Benzenethiol
Dimethyl sulfoxide
Benzene
4-Nitrobiphenyl
Dinitrotoluenes
1-Chloro-2-nitrobenzene
1-Chloro-4-nitrobenzene
Cresols
Ethylphenols
Xylenols
1,4-Dihydroxybenzene
Pentachlorophenol
3-Nitrophenol
4-Nitrophenol
2-Amino-4,6-dinitrophenol
Dinitrophenols
Phenanthrene
Benzo(c)phenanthrene and alkyl derivatives
Pyridine
Chloropyridines
Disubstituted polysubstituted alkyl pyridines
Dihydroacridine
Dibenz(a,j)acridine
Dibenz(a,h)acridine
Dibenzo(c,g)carbazole
Tritolyl phosphate

XX

Ethyleneimine
1,4-Diaminobenzene
Diazomethane
N,N-Dimethylhydrazine
N,N'-Dimethylhydrazine
N-Nitroso-dimethylamine
N-Nitroso-diethylamine
Perchloromethanethiol
Polychlorinated biphenyls
2,4,6-Trinitrophenol
4,6-Dinitro-o-cresol
Dinitro-p-cresols
Dibenzo(a,i)pyrene

XXX

1,1'-Dichloromethyl ether
Benz(a)anthracene
7,12-Dimethylbenz(a)-anthracene
3-Methylcholanthrene
Dibenz(a,c)anthracene
Dibenz(a,h)anthracene

APPENDIX F

INDEX

Throughout the MEGs reports, data are arranged by category, and information for a specific compound is located quickly using the assigned MEG identification numbers. An alphabetical listing of organic compounds and their MEGs identification numbers are provided in this appendix. The listing includes all preferred names and synonyms appearing on the background information summaries for organic compounds. A total of 586 chemicals are indexed.

A molecular formula index for the organic MEG compounds follows the alphabetical listing.

ALPHABETICAL INDEX GIVING MEG'S IDENTIFICATION NUMBERS AND PREFERRED NAMES

COMPOUND/ELEMENT		PREFERRED NAME
Acenaphthene	21A100	Acenaphthene
1-Acenaphthol	18C100	1-Acenaphthol
Acenaphthylene	21A120	Acenaphthylene
Acetaldehyde	07A040	Acetaldehyde
Acetamide	08C040	Acetamide
Acetic acid	08A040	Acetic acid
Acetic acid amide	08C040	Acetamide
Acetic aldehyde	07A040	Acetaldehyde
Acetone	07B020	Acetone
Acetone dichloride	02A344	2,2-Dichloropropane
Acetonitrile	09A020	Acetonitrile
Acetophenone	07B120	Acetophenone
Acetylbenzene	07B120	Acetophenone
Acetylene	01C020	Acetylene
Acetylene dichloride	02B040	1,2-Dichloroethene
Acetylene tetrachloride	02A300	1,1,2,2-tetrachloroethane
Acridan	23B100	Dihydroacridine
Acridine	23B080	Acridine
Acrolein	07A060	Acrolein
Acrolein dichloride	02B106	3,3-Dichloropropene
Acrylic aldehyde	07A060	Acrolein
Acrylon	09A040	Acrylonitrile
Acrylonitrile	09A040	Acrylonitrile
Active amyl alcohol	05A122	2-Methyl-1-butanol
Adipic acid	08A180	Adipic acid
Aerothene TT	02A280	Trichloroethane
Alkanes (C = 10, 11)	01A240	Alkanes (C = 10, 11)
Allylamine	10A110	3-Aminopropene
3-Amino propylene	10A110	3-Aminopropene
Amino-methane	10A020	Methylamine
2-Amino-1-propanol	10A121	2-Amino-1-propanol
3-Amino-1-propanol	10A122	3-Amino-1-propanol
4-Amino-1,2-dimethyl benzene	10C065	3,4-Xylidine
2-Amino-1,3-dimethyl benzene	10C064	2,6-Xylidine
2-Amino-1,4-dimethyl benzene	10C063	2,5-Xylidine
2-Amino-2-methylpropane	10A143	2-Amino-2-methylpropane
1-Amino-2-propanol	10A123	1-Amino-2-propanol
1-Amino-2,3-dimethyl benzene	10C061	2,3-Xylidine
1-Amino-2,4-dimethyl benzene	10C062	2,4-Xylidine
Di[-4-amino-3-chlorophenyl]methane	10C180	4,4'-Methylene bis(2-chloroaniline)
1-Amino-3,5-dimethyl benzene	10C066	3,5-Xylidine
2-Amino-4,6-dinitrophenol	20A080	2-Amino-4,6-dinitrophenol
4-Aminoaniline	10C100	1,4-Diaminobenzene
Aminoanisole	10C080	Anisidines
2-Aminoanisole	10C081	o-Anisidine
4-Aminoanisole	10C083	p-Anisidine
Aminobenzene	10C020	Aniline
4-Aminobiphenyl	10C120	4-Aminobiphenyl
1-Aminobutane	10A141	1-Aminobutane
2-Aminobutane	10A142	2-Aminobutane
Aminobutanes	10A140	Butylamines
Aminocaproic acid	08B100	6-Aminohexanoic acid
6-Aminocaproic acid	08B100	6-Aminohexanoic acid
Aminocyclohexane	10A160	Cyclohexylamine
Aminodimethylbenzenes	10C060	Dimethylanilines
1-Aminoethane	10A040	Ethlyamine
2-Aminoethanol	10A060	Ethanolamine
6-Aminohexanoic acid	08B100	6-Aminohexanoic acid
6-Aminohexanoic lactam	08C060	6-Hexanelactam
1-Aminonaphthalene	10C200	1-Aminonaphthalene
2-Aminonaphthalene	10C220	2-Aminonaphthalene
1-Aminopropane	10A100	1-Aminopropane
3-Aminopropene	10A110	3-Aminopropene
2-Aminopropylalcohol	10A121	2-Amino-1-propanol
2-Aminotoluene	10C041	2-Aminotoluene
3-Aminotoluene	10C042	3-Aminotoluene

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COMPOUND/ELEMENT		PREFERRED NAME
4-Aminotoluene	10C043	4-Aminotoluene
Aminotoluenes	10C040	Aminotoluenes
n-Amyl acetate	08D141	n-Amyl acetate
sec-Amyl acetate	08D142	sec-Amyl acetate
Amyl acetates	08D140	Amyl acetates
Amyl acetic ether	08D141	n-Amyl acetate
Amyl alcohol	05A121	n-Pentanol
sec-Amyl alcohol	05B061	2-Pentanol
t-Amyl alcohol	05C040	t-Pentanol
Amyl alcohols	05A120	Pentanols, (primary)
Amyl alcohols	05B060	Pentanols, (secondary)
Amyl hydride	01A101	n-Pentane
a-n-Amylene	01B101	1-Pentene
cis-B-n-Amylene	01B102	cis-2-Pentene
trans-B-n-Amylene	01B103	trans-2-Pentene
Amylenes	01B100	Pentenes
Di-n-amylnitrosamine	12A100	N-Nitrosodipentylamine
Aniline	10C020	Aniline
o-Anisidine	10C081	o-Anisidine
m-Anisidine	10C082	m-Anisidine
p-Anisidine	10C083	p-Anisidine
Anisidines	10C080	Anisidines
Anthracene	21A140	Anthracene
2-Anthracenethiol	13A121	2-Anthracenethiol
9-Anthracenethiol	13A122	9-Anthracenethiol
Anthracenethiols	13A120	Anthracenethiols
Anthraquinone-disulfonic acids	14A040	Anthraquinone-disulfonic acids
9,10-Anthraquinone-1,5-disulfonic acid	14A041	9,10-Anthraquinone-1,5-disulfonic acid
9,10-Anthraquinone-1,6-disulfonic acid	14A042	9,10-Anthraquinone-1,6-disulfonic acid
9,10-Anthraquinone-1,7-disulfonic acid	14A043	9,10-Anthraquinone-1,7-disulfonic acid
9,10-Anthraquinone-1,8-disulfonic acid	14A044	9,10-Anthraquinone-1,8-disulfonic acid
Aroclors	16A220	Polychlorinated biphenyls (PCB's)
1-Aza-2,4-cyclopentadiene	23C020	Pyrrole
10-Azaanthracene	23B080	Acridine
Azabenzene	23A020	Pyridine
Azacyclopropane	10B020	Ethyleneimine
2-Azafluoranthene	23B300	Indeno(1,2,3-ij)isoquinoline
9-Azafluorene	23C080	Carbazole
1-Azaindene	23C040	Indole
9-Azaphenanthrene	23B120	Phenanthridine
Azimethylene	11A020	Diazomethane
Azine	23A020	Pyridine
Aziridine	10B020	Ethyleneimine
Azole	23C020	Pyrrole
B(a)P	21C100	Benzo(a)pyrene
B(b)F	22C080	Benzo(b)fluoranthene
B(j)F	22C040	Benzo(j)fluoranthene
BA	21B040	Benz(a)anthracene
Banana oil	08D143	Isoamyl acetate
Benz(a)acridine	23B120	Benz(a)acridine
Benz(a)acridine	23B180	Benz(a)acridine
Benz(a)anthracene	21B040	Benz(a)anthracene
Benz(a)anthrene-7(12H)one	07B160	5,6-Benzo-9-anthrone
Benz(a)phenanthrene	21B120	Chrysene
Benz(c)acridine	23B200	Benz(c)acridine
Benz(c)acridine	23B200	Benz(c)acridine
Benz(e)acephenantrylene	22C080	Benzo(b)fluoranthene
1,2-Benz-10-anthrone	07B160	5,6-Benzo-9-anthrone
2,3-Benz-4-azafluorene	23B280	2,3-Benz-4-azafluorene
1,2-Benzacridine	23B180	Benz(a)acridine
3,4-Benzacridine	23B200	Benz(c)acridine
Benzaldehyde	07A140	Benzaldehyde
2,3-Benzanthracene	21B020	Naphthacene
1,2-Benzanthracene	21B040	Benz(a)anthracene
1-Benzazine	23B021	Quinoline
1-Benzazole	23C040	Indole

COMPOUND/ELEMENT		PREFERRED NAME
1,2-Benzcarbazole	23C120	Benzo(a)carbazole
Benzene	15A020	Benzene
Benzene carbinol	05A140	Benzyl alcohol
g-Benzene hexachloride	02A380	Hexachlorocyclohexane
Benzene methanol	05A140	Benzyl alcohol
Benzene-trans-hexachloride	02A380	Hexachlorocyclohexane
Benzenecarbinal	07A140	Benzaldehyde
Benzenecarboxylic acid	08A160	Benzoic acid
1,4-Benzenediamine	10C100	1,4-Diaminobenzene
1,2-Benzenedicarboxylic acid	08A200	Phthalic acid
o-Benzenediol	18B020	Catechol
m-Benzenediol	18B040	1,3-Dihydroxybenzene
1,4-Benzenediol	18B060	1,4-Dihydroxybenzene
Benzenesulfonic acid	14A020	Benzenesulfonic acid
Benzenetetrahydride	01B160	Cyclohexene
Benzenethiol	13A100	Benzenethiol
1,2,3-Benzenetriol	18B080	1,2,3-Trihydroxybenzene
8,9-Benzfluoranthene	22C020	Benzo(k)fluoranthene
7,8-Benzfluoranthene	22C040	Benzo(j)fluoranthene
Benzidine	10C140	Benzidine
4,5-Benzindane	22A040	Cyclopentanonaphthalene
2,3-Benzindene	22A020	Fluorene
Benzino form	02A240	Carbon Tetrachloride
Benzo(a)carbazole	23C120	Benzo(a)carbazole
11 H-Benzo(a)carbazole	23C120	Benzo(a)carbazole
Benzo(a)fluorene	22B060	1,2-Benzofluorene
11-HBenzo(a)fluorene	22B060	1,2-Benzofluorene
Benzo(a)pyrene	21C100	Benzo(a)pyrene
Benzo(b)anthracene	21B020	Naphthacene
Benzo(b)fluoranthene	22C080	Benzo(b)fluoranthene
Benzo(b)fluorene	22B020	2,3-Benzofluorene
11-HBenzo(b)fluorene	22B020	2,3-Benzofluorene
Benzo(b)naphtho(1,2-d)thiophene	25B082	Benzo(b)naphtho(1,2-d)thiophene
Benzo(b)naphtho(2,1-d)thiophene	25B083	Benzo(b)naphtho(2,1-d)thiophene
Benzo(b)naphtho(2,3-d)furan	24B060	Benzo(b)naphtho(2,3-d)furan
Benzo(b)naphtho(2,3-d)thiophene	25B081	Benzo(b)naphtho(2,3-d)thiophene
Benzo(b)phenanthrene	21B040	Benz(a)anthracene
Benzo(b)pyridine	23B021	Quinoline
Benzo(b)quinoline	23B080	Acridine
Benzo(b)thiophene	25B040	Benzo(b)thiophene
Benzo(b)triphenylene	21C060	Dibenz(a,c)anthracene
Benzo(c)phenanthrene	21B101	Benzo(c)phenanthrene
Benzo(c)phenanthrene and Alkyl derivatives	21B100	Benzo(c)phenanthrene and Alkyl derivatives
Benzo(c)pyridine	23B022	Isoquinoline
Benzo(c)quinoline	23B120	Phenanthridine
Benzo(def)phenanthrene	21B180	Pyrene
Benzo(e)pyrene	21C120	Benzo(e)pyrene
Benzo(f)quinoline	23B140	Benzo(f)quinoline
Benzo(g)chrysene	21C040	Benzo(g)chrysene
Benzo(ghi)perylene	21D080	Benzo(ghi)perylene
Benzo(h)quinoline	23B160	Benzo(h)quinoline
Benzo(j)fluoranthene	22C040	Benzo(j)fluoranthene
Benzo(j,k)fluorene	22B040	Fluoranthene
Benzo(k)fluoranthene	22C020	Benzo(k)fluoranthene
Benzo(k)xanthene	24B100	1,9-Benzoxanthene
Benzo(rst)pentaphene	21D040	Dibenzo(a,i)pyrene
5,6-Benzo-9-anthrone	07B160	5,6-Benzo-9-anthrone
11,12-Benzofluoranthene	22C020	Benzo(k)fluoranthene
10,11-Benzofluoranthene	22C040	Benzo(j)fluoranthene
2,3-Benzofluoranthene	22C080	Benzo(b)fluoranthene
2,3-Benzofluorene	22B020	2,3-Benzofluorene
1,2-Benzofluorene	22B060	1,2-Benzofluorene
Benzofuran	24A040	Benzofuran
Benzoic acid	08A160	Benzoic acid
Benzoic acid phenyl ester	08D180	Phenyl benzoate
Benzoic aldehyde	07A140	Benzaldehyde

COMPOUND/ELEMENT		PREFERRED NAME
Benzol	15A020	Benzene
1,2-Benzonaphthacene	21C020	1,2-Benzonaphthacene
Benzonaphthathiophenes	25B080	Benzonaphthathiophenes
Benzonitrile	09B020	Benzonitrile
1,12-Benzoperylene	21D080	Benzo(ghi)perylene
2,3-Benzophenanthrene	21B040	Benz(a)anthracene
1,2-Benzophenanthrene	21B120	Chrysene
9,10-Benzophenanthrene	21B160	Triphenylene
4,5-Benzopyrene	21C120	Benzo(e)pyrene
2,3-Benzopyrrole	23C040	Indole
3,4-Benzoquinoline	23B120	Phenanthridine
5,6-Benzoquinoline	23B140	Benzo(f)quinoline
7,8-Benzoquinoline	23B160	Benzo(h)quinoline
Benzosulfonazole	23D020	Benzothiazole
Benzothiazole	23D020	Benzothiazole
Benzothiofuran	25B040	Benzo(b)thiophene
2,3-Benzothiophene	25B040	Benzo(b)thiophene
1,9-Benzoxanthene	24B100	1,9-Benzoxanthene
Benzoyl alcohol	05A140	Benzyl alcohol
1,2-Benzpyrene	21C100	Benzo(a)pyrene
3,4-Benzpyrene	21C100	Benzo(a)pyrene
1,2-Benzpyrene	21C120	Benzo(e)pyrene
Benzyl alcohol	05A140	Benzyl alcohol
Benzyl carbinol	05A160	Phenethyl alcohol
Benzyl chloride	16B020	a-Chlorotoluene
Betaprone	08B060	b-Propiolactone
Bibenzene	15A160	Biphenyl
Bicyclopentadiene	01B220	Dicyclopentadiene
Bimethyl	01A040	Ethane
Biphenyl	15A160	Biphenyl
4-Biphenylamine	10C120	4-Aminobiphenyl
2,2'-Biphenyldiol	18A120	2,2'-Dihydroxydiphenyl
Biphenylols	18A100	Phenylphenols
Biscyclopentadiene	01B220	Dicyclopentadiene
Bisoflex	08D260	Di-2-ethylhexyl adipate
2,2'-Bithienyl	25B020	2,2'-Bithiophene
2,2'-Bithiophene	25B020	2,2'-Bithiophene
Bivinyl	01B082	1,3-Butadiene
2-Bornanone	07B100	Camphor
Borneo camphor	05B120	Borneol
Borneol	05B120	Borneol
Bornyl alcohol	05B120	Borneol
BPL	08B060	b-Propiolactone
b-Brazan	24B060	Benzo(b)naphtho(2,3-d)furan
1-Bromo-2-chlorobenzene	16A081	1-Bromo-2-chlorobenzene
2-Bromo-2-methylpropane	02A363	2-Bromoisobutane
1-Bromo-3-chlorobenzene	16A082	1-Bromo-3-chlorobenzene
1-Bromo-4-chlorobenzene	16A083	1-Bromo-4-chlorobenzene
Bromobenzene	16A040	Bromobenzene
1-Bromobutane	02A361	1-Bromobutane
2-Bromobutane	02A362	2-Bromobutane
Bromobutanes	02A360	Bromobutanes
Bromochlorobenzenes	16A080	Bromochlorobenzenes
Bromodichloromethane	02A120	Bromodichloromethane
Bromoform	02A160	Bromoform
2-Bromoisobutane	02A363	2-Bromoisobutane
4-Bromophenyl phenyl ether	04A200	4-Bromophenyl phenyl ether
Buta-1,3-diene	01B082	1,3-Butadiene
1,2-Butadiene	01B081	1,2-Butadiene
1,3-Butadiene	01B082	1,3-Butadiene
Butadienes	01B080	Butadienes
Butanal	07A100	Butyraldehyde
n-Butane	01A081	n-Butane
Butanecarboxylic acid	08A080	Valeric acid
1,4-Butanedicarboxylic acid	08A180	Adipic acid
Butanes	01A080	Butanes

COMPOUND/ELEMENT		PREFERRED NAME
n-Butanethiol	13A080	n-Butanethiol
1-Butanethiol	13A080	n-Butanethiol
Butanitrile	09A080	Butyronitrile
n-Butanol	05A080	n-Butanol
1-Butanol	05A080	n-Butanol
2-Butanol	05B040	2-Butanol
t-Butanol	05C020	t-Butyl alcohol
Butanone	07B060	Butanone
2-Butanone	07B060	Butanone
1-Butene	01B061	1-Butene
cis-2-Butene	01B062	cis-2-Butene
trans-2-Butene	01B063	trans-2-Butene
cis-Butenedioic acid	08A060	Maleic acid
Butric aldehyde	07A100	Butyraldehyde
Butter or methyl yellow	11A040	p-Dimemthylaminoazobenzene
n-Butyl acetate	08D121	n-Butyl acetate
sec-Butyl acetate	08D122	sec-Butyl acetate
Butyl acetates	08D120	Butyl acetates
Butyl adipate	08D220	Dibutyl adipate
Di-N-butyl adipate	08D220	Dibutyl adipate
Butyl alcohol	05A080	n-Butanol
sec-Butyl alcohol	05B040	2-Butanol
t-Butyl alcohol	05C020	t-Butyl alcohol
n-Butyl aldehyde	07A100	Butyraldehyde
n-Butyl benzene	15A141	n-Butyl benzene
sec-Butyl benzene	15A142	sec-Butyl benzene
sec-Butyl benzene	15A142	sec-Butyl benzene
tert-Butyl benzene	15A143	tert-Butyl benzene
tert-Butyl benzene	15A143	tert-Butyl benzene
Butyl benzenes	15A140	Butyl benzenes
Butyl benzenes	15A140	Butyl benzenes
Butyl benzyl phthalate	08D320	Butyl benzyl phthalate
Butyl ethanoate	08D121	n-Butyl acetate
n-Butyl mercaptan	13A080	n-Butanethiol
Di-n-butyl phthalate	08D283	Di-n-butyl Phthalate
n-Butylamine	10A141	1-Aminobutane
Butylamines	10A140	Butylamines
n-Butylbromide	02A361	1-Bromobutane
sec-Butylbromide	02A362	2-Bromobutane
tert-Butylbromide	02A363	2-Bromoisobutane
a-Butylene	01B061	1-Butene
cis-B-Butylene	01B062	cis-2-Butene
trans-B-Butylene	01B063	trans-2-Butene
Butylenes	01B060	Butylenes
Butylethylene	01B141	1-Hexene
n-Butylthioalcohol	13A080	n-Butanethiol
1-Butyne	01C061	1-Butyne
2-Butyne	01C062	2-Butyne
Butynes	01C060	Butynes
Butyraldehyde	07A100	Butyraldehyde
g-Butyrolactone	08B080	g-Butyrolactone
4-Butyrolactone	08B080	g-Butyrolactone
Butyronitrile	09A080	Butyronitrile
C-56	02B140	Hexachlorocyclopentadiene
a,b-Camphol	05B140	Isoborneol
d-2-Camphonone	07B100	Camphor
2-Camphonone	07B100	Camphor
Camphor	07B100	Camphor
Capric acid	08A103	Capric acid
Caproic acid	08A101	Caproic acid
e-Caprolactam	08C060	6-Hexanelactam
Caprylic acid	08A102	Caprylic acid
Carbazine	23B100	Dihydroacridine
Carbazole	23C080	Carbazole
Carbinol	05A020	Methanol
Carbolic acid	18A020	Phenol

COMPOUND/ELEMENT		PREFERRED NAME
Carbon bichloride	02B080	Tetrachloroethene
Carbon dichloride	02B080	Tetrachloroethene
Carbon hexachloride	02A320	Hexachloroethane
Carbon tetrachloride	02A240	Carbon tetrachloride
Carvol	07B181	Carvone (d or l)
Carvone (d or l)	07B181	Carvone (d or l)
Carvones	07B180	Carvones
Catechol	18B020	Catechol
Cetylic acid	08A122	Palmitic acid
Chinoline	23B021	Quinoline
Chlorinated cresols	19B020	Chlorinated cresols
Chlorinated-m-cresol	19B022	Chlorinated m-cresol
Chlorinated-o-cresol	19B021	Chlorinated o-cresol
Chlorinated-p-cresol	19B023	Chlorinated p-cresol
bis-(2-Chloro-1-methylethyl)ether	04B100	2,2'-Dichlorodiisopropyl ether
2-Chloro-1,2-epoxypropane	04A040	2-Chloro-1,2-epoxypropane
1-Chloro-1,2-oxetane	04A060	1-Chloro-1,3-epoxypropane
1-Chloro-1,3-epoxypropane	04A060	1-Chloro-1,3-epoxypropane
4-Chloro-2-hydroxy benzophenone	07C04A	4-Chloro-2-hydroxy benzophenone
4-Chloro-2'-hydroxy benzophenone	07C04B	4-Chloro-2'-hydroxy benzophenone
5-Chloro-2-hydroxy benzophenone	07C04E	5-Chloro-2-hydroxy benzophenone
2-Chloro-2'-hydroxy benzophenone	07C041	2-Chloro-2'-hydroxy benzophenone
3-Chloro-2'-hydroxy benzophenone	07C045	3-Chloro-2'-hydroxy benzophenone
3-Chloro-2-hydroxy benzophenone	07C046	3-Chloro-2-hydroxy benzophenone
1-Chloro-2-nitrobenzene	17B040	1-Chloro-2-nitrobenzene
1-Chloro-2,3-epoxypropane	04A050	Epichlorhydrin
4-Chloro-3'-hydroxy benzophenone	07C04C	4-Chloro-3'-hydroxy benzophenons
2-Chloro-3'-hydroxy benzophenone	07C042	2-Chloro-3'-hydroxy benzophenonen
3-Chloro-3'-hydroxy benzophenone	07C047	3-Chloro-3'-hydroxy benzophenone
4-Chloro-4'-hydroxy benzophenone	07C040	4-Chloro-4'-hydroxy benzophenone
2-Chloro-4'-hydroxy benzophenone	07C043	2-Chloro-4'-hydroxy benzophenone
3-Chloro-4'-hydroxy benzophenone	07C048	3-Chloro-4'-hydroxy benzophenone
3-Chloro-4-hydroxy benzophenone	07C049	3-Chloro-4-hydroxy benzophenone
1-Chloro-4-nitrobenzene	17B060	1-Chloro-4-nitrobenzene
2-Chloro-5-hydroxy benzophenone	07C044	2-Chloro-5-hydroxy benzophenone
a-Chloroallychloride	02B103	cis-1,3-Dichloropropene
Chlorobenzene	16A020	Chlorobenzene
a-Chlorobutyl ethyl ether	04A160	a-Chlorobutyl ethyl ether
Chlorodibromomethane	02A140	Dibromochloromethane
2-Chlorodiethyl ether	04A120	2-Chloroethyl ethyl ether
Chloroethane	02A250	Ethyl chloride
Chloroethene	02B020	Vinyl chloride
Chloroethyl	02A250	Ethyl chloride
2-Chloroethyl ethyl ether	04A120	2-Chloroethyl ethyl ether
2-Chloroethyl vinyl ether	04A140	2-Chloroethyl vinyl ether
bis-(2-Chloroethyl)ether	04B080	2,2'-Dichlorodiethyl ether
Chloroethylene	02B020	Vinyl chloride
2-Chloroethylmethyl ether	04A080	2-Chloroethylmethyl ether
Chloroform	02A100	Chloroform
Chlorohydroxy benzophenones	07C040	Chlorohydroxy benzophenones
Chlorohydroxytoluenes	19B020	Chlorinated cresols
bis(a-Chloroisopropyl)ether	04B100	2,2'-Dichlorodiisopropyl ether
Chloromethane	02A040	Methyl chloride
Chlorcmethyl ethyl ether	04A100	Chloromethyl ethyl ether
Chloromethyl methyl ether	04A020	Chloromethyl methyl ether
(Chloromethyl)benzene	16B020	a-Chlorotoluene
1,2-bis(Chloromethyl)benzene	16B041	1,2-bis (Chloromethyl) benzene
1,3-bis(Chloromethyl)benzene	16B042	1,3-bis (Chloromethyl) benzene
1,4-bis(Chloromethyl)benzene	16B043	1,4-bis (Chloromethyl) benzene
bis (Chloromethyl)benzenes	16B040	bis (Chloromethyl) benzenes
bis(Chloromethyl)ether	04B020	1,1'-Dichloromethyl ether
Chloromethyloxirane	04A050	Epichlorhydrin
1-Chloronaphthalene	16A201	1-Chloronaphthalene
a-Chloronaphthalene	16A201	1-Chloronaphthalene
2-Chloronaphthalene	16A202	2-Chloronaphthalene
b-Chloronaphthalene	16A202	2-Chloronaphthalene

COMPOUND/ELEMENT		PREFERRED NAME
Chloronaphthalenes	16A200	Chloronaphthalenes
o-Chloronitrobenzene	17B040	1-Chloro-2-nitrobenzene
p-Chloronitrobenzene	17B060	1-Chloro-4-nitrobenzene
1-Chlorooctane	02A400	1-Chlorooctane
Chlorophen	19A060	Pentachlorophenol
2-Chlorophenol	19A020	2-Chlorophenol
o-Chlorophenol	19A020	2-Chlorophenol
4-Chlorophenyl phenyl ether	04A180	4-Chlorophenyl phenyl ether
g-Chloropropylene oxide	04A050	Epichlorhydrin
2-Chloropyridine	23A101	2-Chloropyridine
3-Chloropyridine	23A102	3-Chloropyridine
4-Chloropyridine	23A103	4-Chloropyridine
Chloropyridines	23A100	Chloropyridines
Chlorothene	02A280	Trichloroethane
2-Chlorotoluene	16A180	2-Chlorotoluene
o-Chlorotoluene	16A180	2-Chlorotoluene
a-Chlorotoluene	16B020	a-Chlorotoluene
Chlorten	02A280	Trichloroethane
Chrysene	21B120	Chrysene
a-Chrysidine	23B200	Benz(c)acridine
a-Chrysidine	23B200	Benz(c)acridine
Chrysofluorene	22B060	1,2-Benzofluorene
Chrysogen	21B020	Napthacene
CMME	04A020	Chloromethyl methyl ether
2,4,6-Collidine	23A122	2,4,6-Collidine
Collidines	23A120	Collidines
Coronene	21D100	Coronene
Coumarone	24A040	Benzofuran
m-Cresol	18A041	m-Cresol
o-Cresol	18A042	o-Cresol
p-Cresol	18A043	p-Cresol
Cresols	18A040	Cresols
Cresylic acid	18A040	Cresols
Crotonylene	01C062	2-Butyne
Cumarone	24A040	Benzofuran
Cumene	15A120	Isopropyl benzene
Cyanobenzene	09B020	Benzonitrile
1-Cyanoethane	09A060	1-Cyanoethane
Cyanoethylene	09A040	Acrylonitrile
1-Cyanonaphthalene	09B041	a-Naphthonitrile
2-Cyanonaphthalene	09B042	b-Naphthonitrile
Cyanonaphthalenes	09B040	Naphthonitriles
Cyanopropane	09A080	Butyronitrile
1,3-Cyclohexadiene	01B181	1,3-Cyclohexadiene
1,4-Cyclohexadiene	01B182	1,4-Cyclohexadiene
Cyclohexadienes	01B180	Cyclohexadienes
Cyclohexane	01A160	Cyclohexane
Cyclohexene	01B160	Cyclohexene
Cyclohexylamine	10A160	Cyclohexylamine
Cyclopenta(def)phenanthrene	22B080	Cyclopenta(def)phenanthrene
4H-Cyclopenta(def)phenanthrene	22B080	Cyclopenta(def)phenanthrene
Cyclopentadiene	01B120	Cyclopentadiene
1,3-Cyclopentadiene	01B120	Cyclopentadiene
1,3-Cyclopentadiene dimer	01B220	Dicyclopentadiene
Cyclopentane	01A120	Cyclopentane
1,2-Cyclopentanonaphthalene	22A040	Cyclopentanonaphthalene
Cyclopentanonaphthalene	22A040	Cyclopentanonaphthalene
Cyclotetramethylene oxide	03A060	Tetrahydrofuran
b-Cytisolidine	23B065	6,8-Dimethylquinoline
DB(a,h)A	21C080	Dibenz(a,h)anthracene
DB(a,h)P	21D020	Dibenzo(a,h)pyrene
n-Decane	01A241	n-Decane
n-Decanoic acid	08A103	Capric acid
n-Decoic acid	08A103	Capric acid
Decylhydride	01A241	n-Decane
2,6-Di-sec-butyl phenol	18A182	2,6-Di-sec-butyl phenol

COMPOUND/ELEMENT		PREFERRED NAME
1,4-Di-tert-butyl benzene	15B106	1,4-Di-tert-butyl benzene
Di-2-ethylbutyl adipate	08D240	Di-2-ethylbutyl adipate
Di-2-ethylhexyl adipate	08D260	Di-2-ethylhexyl adipate
Di-2-ethylhexyl phthalate	08D300	Di-2-ethylhexyl phthalate
Dialkyl benzenes (MW:134-191)	15B100	Dialkyl benzenes (MW:134-191)
4,4'-Diamino-3,3'-dichlorobiphenyl	10C160	3,3'-Dichlorobenzidine
1,4-Diaminobenzene	10C100	1,4-Diaminobenzene
p-Diaminobenzene	10C100	1,4-Diaminobenzene
4,4'-Diaminodiphenyl	10C140	Benzidine
1,2-Diaminoethane	10A080	1,2-Diaminoethane
Diazirine	11A020	Diazomethane
Diazomethane	11A020	Diazomethane
Dibenz(a,c)anthracene	21C060	Dibenz(a,c)anthracene
Dibenz(a,h)acridine	23B240	Dibenz(a,h)acridine
Dibenz(a,h)anthracene	21C080	Dibenz(a,h)anthracene
Dibenz(a,j)acridine	23B220	Dibenz(a,j)acridine
Dibenz(a,j)anthracene	21C020	1,2-Benzonaphthacene
Dibenz(b,d)pyrrole	23C080	Carbazole
Dibenz(c,h)acridine	23B260	Dibenz(c,h)acridine
Dibenz(de,kl)anthracene	21C140	Perylene
1,2:7,8-Dibenzacridine	23B220	Dibenz(a,j)acridine
1,2:5,6-Dibenzacridine	23B240	Dibenz(a,h)acridine
3,4:5,6-Dibenzacridine	23B260	Dibenz(c,h)acridine
1,2:6,7-Dibenzanthracene	21C020	1,2-Benzonaphthacene
1,2:3,4-Dibenzanthracene	21C060	Dibenz(a,c)anthracene
1,2:5,6-Dibenzanthracene	21C080	Dibenz(a,h)anthracene
1,2:3,4-Dibenznaphthalene	21B160	Triphenylene
Dibenzo(a,g)carbazole	23C180	Dibenzo(a,g)carbazole
7H-Dibenzo(a,g)carbazole	23C180	Dibenzo(a,g)carbazole
13H-Dibenzo(a,g)fluorene	22C060	1,2:5,6-Dibenzo fluorene
Dibenzo(a,h)pyrene	21D020	Dibenzo(a,h)pyrene
Dibenzo(a,i)carbazole	23C140	Dibenzo(a,i)carbazole
7H-Dibenzo(a,i)carbazole	23C140	Dibenzo(a,i)carbazole
Dibenzo(a,i)phenanthrene	21C160	Picene
Dibenzo(a,i)pyrene	21D040	Dibenzo(a,i)pyrene
Dibenzo(a,l)pyrene	21D060	Dibenzo(a,l)pyrene
Dibenzo(b,def)chrysene	21D020	Dibenzo(a,h)pyrene
Dibenzo(b,e)pyridine	23B080	Acridine
Dibenzo(c,g)carbazole	23C160	Dibenzo(c,g)carbazole
7H-Dibenzo(c,g)carbazole	23C160	Dibenzo(c,g)carbazole
Dibenzo(def,p)chrysene	21D060	Dibenzo(a,l)pyrene
1,2:7,8-Dibenzocarbazole	23C140	Dibenzo(a,i)carbazole
3,4:5,6-Dibenzocarbazole	23C160	Dibenzo(c,g)carbazole
1,2:5,6-Dibenzocarbazole	23C180	Dibenzo(a,g)carbazole
1,2:5,6-Dibenzofluorene	22C060	1,2:5,6-Dibenzofluorene
Dibenzofuran	24B020	Dibenzofuran
1,2:3,4-Dibenzophenanthrene	21C040	Benzo(g)chrysene
1,2:9,10-Dibenzopyrene	21D060	Dibenzo(a,l)pyrene
Dibenzothiophene	25B060	Dibenzothiophene
1,2:7,8-Dibenzphenanthrene	21C160	Picene
1,2:6,7-Dibenzpyrene	21D020	Dibenzo(a,h)pyrene
3,4:8,9-Dibenzpyrene	21D020	Dibenzo(a,h)pyrene
2,3:6,7-Dibenzpyrene	21D040	Dibenzo(a,i)pyrene
4,5:8,9-Dibenzpyrene	21D040	Dibenzo(a,i)pyrene
1,2:3,4-Dibenzpyrene	21D060	Dibenzo(a,l)pyrene
2,3:4,5-Dibenzpyrene	21D060	Dibenzo(a,l)pyrene
1,2-Dibromobenzene	16A061	1,2-Dibromobenzene
1,3-Dibromobenzene	16A062	1,3-Dibromobenzene
1,4-Dibromobenzene	16A063	1,4-Dibromobenzene
Dibromobenzenes	16A060	Dibromobenzenes
Dibromochloromethane	02A140	Dibromochloromethane
Dibromodichloromethane	02A180	Dibromodichloromethane
Dibutyl adipate	08D220	Dibutyl adipate
1,1-Dichloro-2,2-difluoroethene	02B090	1,1-Dichloro-2,2-difluoroethylene
1,1-Dichloro-2,2-difluoroethylene	02B090	1,1-Dichloro-2,2-difluoroethylene
3,3'-Dichloro-4,4'-biphenyldiamine	10C160	3,3'-Dichlorobenzidine

COMPOUND/ELEMENT		PREFERRED NAME
3,3'-Dichloro-4,4'-diaminobiphenyl	10C160	3,3'-Dichlorobenzidine
3,3'Dichloro-4,4'-diaminodiphenyl methane	10C180	4,4'-Methylene bis(2-chloroaniline)
1,2-Dichlorobenzene	16A100	1,2-Dichlorobenzene
o-Dichlorobenzene	16A100	1,2-Dichlorobenzene
1,3-Dichlorobenzene	16A120	1,3-Dichlorobenzene
m-Dichlorobenzene	16A120	1,3-Dichlorobenzene
1,4-Dichlorobenzene	16A140	1,4-Dichlorobenzene
p-Dichlorobenzene	16A140	1,4-Dichlorobenzene
3,3'-Dichlorobenzidine	10C160	3,3'-Dichlorobenzidine
o,o'-Dichlorobenzidine	10C160	3,3'-Dichlorobenzidine
Dichlorobromomethane	02A120	Bromodichloromethane
1,1'-Dichlorodiethyl ether	04B040	1,1'-Dichlorodiethyl ether
2,2'-Dichlorodiethyl ether	04B080	2,2'-Dichlorodiethyl ether
Dichlorodifluoromethane	02A200	Dichlorodifluoromethane
1,2-Dichlorodiisobutyl ether	04B120	1,2-Dichlorodiisobutyl ether
2,2'-Dichlorodiisopropyl ether	04B100	2,2'-Dichlorodiisopropyl ether
1,2-Dichloroethane	02A260	1,2-Dichloroethane
1,2-Dichloroethene	02B040	1,2-Dichloroethene
cis-1,2-Dichloroethene	02B041	cis-1,2-Dichloroethene
trans-1,2-Dichloroethene	02B042	trans-1,2-Dichloroethene
1,1-Dichloroethene	02B060	1,1-Dichloroethene
1,2-Dichloroethyl ethyl ether	04B060	1,2-Dichloroethyl ethyl ether
Dichloroethylene	02B040	1,2-Dichloroethene
1,1-Dichloroethylene	02B060	1,1-Dichloroethene
Dichloromethane	02A080	Methylene chloride
1,1'-Dichloromethyl ether	04B020	1,1'-Dichloromethyl ether
2,4-Dichlorophenol	19A040	2,4-Dichlorophenol
1,1-Dichloropropane	02A341	1,1-Dichloropropane
1,2-Dichloropropane	02A342	1,2-Dichloropropane
1,3-Dichloropropane	02A343	1,3-Dichloropropane
2,2-Dichloropropane	02A344	2,2-Dichloropropane
Dichloropropanes	02A340	Dichloropropanes
1,1-Dichloropropene	02B101	1,1-Dichloropropene
trans-1,2-Dichloropropene	02B102	trans-1,2-Dichloropropene
cis-1,3-Dichloropropene	02B103	cis-1,3-Dichloropropene
trans-1,3-Dichloropropene	02B104	trans-1,3-Dichloropropene
2,3-Dichloropropene	02B105	2,3-Dichloropropene
3,3-Dichloropropene	02B106	3,3-Dichloropropene
Dichloropropenes	02B100	Dichloropropenes
1,2-Dichloropropylene	02B102	trans-1,2-Dichloropropene
a,g-Dichloropropylene	02B103	cis-1,3-Dichloropropene
1,3-Dichloropropylene	02B103	cis-1,3-Dichloropropene
1,3-Dicyano-1-hydroxybutane	09A100	1,3-Dicyano-1-hydroxybutane
Dicyclopentadiene	01B220	Dicyclopentadiene
Diethamine	10B080	Diethylamine
Diethyl adipate	08D200	Diethyl adipate
o-Diethyl benzene	15B101	o-Diethyl benzene
m-Diethyl benzene	15B102	m-Diethyl benzene
p-Diethyl benzene	15B103	p-Diethyl benzene
Diethyl carbinol	05B062	3-Pentanol
Diethyl hexyl phthalate	08D300	Di-2-ethylhexyl phthalate
Diethyl phthalate	08D282	Diethyl phthalate
Diethyl sulfide	13B040	Diethyl sulfide
Diethylamine	10B080	Diethylamine
1,4-Diethylene dioxide	03B020	1,4-Dioxane
Diethylene imidoxide	10B100	Morpholine
Diethylene oximide	10B100	Morpholine
Diethyleneimide oxide	10B100	Morpholine
Diethylnitrosoamine	12A040	N-Nitrosodiethylamine
1,1-Difluoro-2,2-dichloroethylene	02B090	1,1-Dichloro-2,2-difluoroethylene
Difluorodichloromethane	02A200	Dichlorodifluoromethane
Dihexyl	01A260	n-Dodecane
Dihydro-(d or l)carvone	07B182	Dihydro-(d or l) carvone
Dihydro-2(3H)-furanone	08B080	g-Butyrolactone
1,2-Dihydro-3-methylbenz(j)aceanthrylene	21B080	3-Methylcholanthrene
1,2-Dihydroacenaphthylene	21A100	Acenaphthene

COMPOUND/ELEMENT		PREFERRED NAME
Dihydroacridine	23B100	Dihydroacridine
1,4-Dihydrobenzene	01B182	1,4-Cyclohexadiene
1,2-Dihydrobenzene	01B181	1,3-Cyclohexadiene
2,3-Dihydroindene	15B020	Indan
1,2-Dihydronaphthalene	15B141	1,2-Dihydronaphthalene
1,4-Dihydronaphthalene	15B142	1,4-Dihydronaphthalene
Dihydronaphthalenes	15B140	Dihydronaphthalenes
o-Dihydroxybenzene	18B020	Catechol
1,2-Dihydroxybenzene	18B020	Catechol
1,3-Dihydroxybenzene	18B040	1,3-Dihydroxybenzene
m-Dihydroxybenzene	18B040	1,3-Dihydroxybenzene
1,4-Dihydroxybenzene	18B060	1,4-Dihydroxybenzene
p-Dihydroxybenzene	18B060	1,4-Dihydroxybenzene
2,2'-Dihydroxydiphenyl	18A120	2,2'-Dihydroxydiphenyl
1,2-Dihydroxyethane	06A020	Ethylene glycol
1,2-Dihydroxypropane	06A040	Propylene glycol
Diisobutyl carbinol	05B080	2,6-Dimethyl-4-heptanol
o-Diisopropyl benzene	15B104	o-Diisopropyl benzene
m-Diisopropyl benzene	15B105	m-Diisopropyl benzene
Diisopropyl ether	03A020	Isopropyl ether
Dimazine	11B040	N,N-Dimethylhydrazine
3,4-diMe-thiophene	25A064	3,4-Dimethylthiophene
Dimethyl	01A040	Ethane
2,3-Dimethyl aniline	10C061	2,3-Xylidine
2,4-Dimethyl aniline	10C062	2,4-Xylidine
2,5-Dimethyl aniline	10C063	2,5-Xylidine
2,6-Dimethyl aniline	10C064	2,6-Xylidine
3,4-Dimethyl aniline	10C065	3,4-Xylidine
3,5-Dimethyl aniline	10C066	3,5-Xylidine
Dimethyl chloroether	04A020	Chloromethyl methyl ether
Dimethyl disulfide	13B080	Methyldisulfide
Dimethyl ethyl carbinol	05C040	t-Pentanol
2,6-Dimethyl heptan-4-ol	05B080	2,6-Dimethyl-4-heptanol
1,4-Dimethyl naphthalene	21A081	1,4-Dimethyl naphthalene
2,3-Dimethyl naphthalene	21A082	2,3-Dimethyl naphthalene
2,6-Dimethyl naphthalene	21A083	2,6-Dimethyl napthalene
Dimethyl naphthalenes	21A080	Dimethyl naphthalenes
Dimethyl phthalate	08D281	Dimethyl phthalate
3,4-Dimethyl pyrene	21B221	3,4-Dimethyl pyrene
4,5-Dimethyl pyrene	21B222	4,5-Dimethyl pyrene
Dimethyl pyrenes	21B220	Dimethyl pyrenes
Dimethyl sulfide	13B020	Dimethyl sulfide
Dimethyl sulfoxide	14B020	Dimethyl sulfoxide
2,4-Dimethyl-1-hydroxy benzene	18A142	2,4-Xylenol
2,2-Dimethyl-1-propanol	05A123	2,2-Dimethyl-1-propanol
9,10-Dimethyl-1,2-benzanthracene	21B060	7,12-Dimethylbenz(a)anthracene
1,4-Dimethyl-2-hydroxy benzene	18A143	2,5-Xylenol
1,3-Dimethyl-2-hydroxy benzene	18A144	2,6-Xylenol
1,2-Dimethyl-3-hydroxy benzene	18A141	2,3-Xylenol
N,N-Dimethyl-4-(phenylazo)benzenamine	11A040	p-Dimethylaminoazobenzene
2,6-Dimethyl-4-heptanol	05B080	2,6-Dimethyl-4-heptanol
2,6-Dimethyl-4-heptyl phenol	18A183	2,6-Dimethyl-4-heptyl phenol
1,2-Dimethyl-4-hydroxy benzene	18A146	3,4-Xylenol
1,3-Dimethyl-5-hydroxy benzene	18A145	3,5-Xylenol
Dimethylacetylene	01C062	2-Butyne
Dimethylamine	10B040	Dimethylamine
p-Dimethylaminoazobenzene	11A040	p-Dimethylaminoazobenzene
4-Dimethylaminoazobenzene	11A040	p-Dimethylaminoazobenzene
N,N-Dimethylaniline	10D020	N,N-Dimethylaniline
Dimethylanilines	10C060	Dimethylanilines
2,7-Dimethylanthracene	21A160	2,7-Dimethylanthracene
7,12-Dimethylbenz(a)anthracene	21B060	7,12-Dimethylbenz(a)anthracene
Dimethylbenzene	15B080	Xylenes
Dimethylenediamine	10A080	1,2-Diaminoethane
(1,1-Dimethylethyl)benzene	15A143	tert-Butyl benzene
(1,1-Dimethylethyl)benzene	15A143	tert-Butyl benzene

COMPOUND/ELEMENT		PREFERRED NAME
Dimethylethylene	01B062	cis-2-Butene
N,N-Dimethylhydrazine	11B040	N,N-Dimethylhydrazine
1,1-Dimethylhydrazine	11B040	N,N-Dimethylhydrazine
N,N'-Dimethylhydrazine	11B060	N,N'-Dimethylhydrazine
1,2-Dimethylhydrazine	11B060	N,N'-Dimethylhydrazine
Dimethylhydrazine	11B060	N,N'-Dimethylhydrazine
Dimethylhydroxybenzenes	18A140	Xylenols
1,3-Dimethylisoquinoline	23B066	1,3-Dimethylisoquinoline
1,5-Dimethylisquinoline	23B067	1,5-Dimethylisoquinoline
Dimethylketone	07B020	Acetone
Dimethylmethane	01A060	Propane
a-Dimethylnapthalene	21A081	1,4-Dimethyl naphthalene
Dimethylnitrosoamine	12A020	N-Nitrosodimethylamine
2,3-Dimethylphenol	18A141	2,3-Xylenol
2,4-Dimethylphenol	18A142	2,4-Xylenol
2,5-Dimethylphenol	18A143	2,5-Xylenol
2,6-Dimethylphenol	18A144	2,6-Xylenol
3,5-Dimethylphenol	18A145	3,5-Xylenol
3,4-Dimethylphenol	18A146	3,4-Xylenol
Dimethylphenols	18A140	Xylenols
Dimethylphenylamine	10D020	N,N-Dimethylaniline
2,2-Dimethylpropane	01A103	Neopentane
2,3-Dimethylpyridine	23A141	2,3-Dimethylpyridine
2,4-Dimethylpyridine	23A142	2,4-Dimethylpyridine
2,5-Dimethylpyridine	23A143	2,5-Dimethylpyridine
2,6-Dimethylpyridine	23A144	2,6-Dimethylpyridine
3,4-Dimethylpyridine	23A145	3,4-Dimethylpyridine
2,3-Dimethylquinoline	23B061	2,3-Dimethylquinoline
2,6-Dimethylquinoline	23B062	2,6-Dimethylquinoline
2,8-Dimethylquinoline	23B063	2,8-Dimethylquinoline
3,4-Dimethylquinoline	23B064	3,4-Dimethylquinoline
6,8-Dimethylquinoline	23B065	6,8-Dimethylquinoline
Dimethylquinolines and dimethylisoquinolines	23B060	Dimethyquinolines and dimethylisoquinolines
2,3-Dimethylthiophene	25A061	2,3-Dimethylthiophene
2,4-Dimethylthiophene	25A062	2,4-Dimethylthiophene
2,5-Dimethylthiophene	25A063	2,5-Dimethylthiophene
3,4-Dimethylthiophene	25A064	3,4-Dimethylthiophene
Dimethylthiophenes	25A060	Dimethylthiophenes
peri-Dinaphthalene	21C140	Perylene
4,6-Dinitro-o-cresol	20B020	4,6-Dinitro-o-cresol
2,4-Dinitro-o-cresol	20B020	4,6-Dintro-o-cresol
3,5-Dinitro-p-cresol	20B041	3,5-Dinitro-p-cresol
2,6-Dinitro-p-cresol	20B042	2,6-Dinitro-p-cresol
Dinitro-p-cresols	20B040	Dinitro-p-cresols
3,5-Dinitro-2-hydroxy toluene	20B020	4,6-Dinitro-o-cresol
Dinitroaminophenol	20A080	2-Amino-4,6-dinitrophenol
Dinitrohydroxybenzenes	20A100	Dinitrophenols
2,4-Dinitrophenol	20A101	2,4-Dinitrophenol
2,5-Dinitrophenol	20A102	2,5-Dinitrophenol
2,6-Dinitrophenol	20A103	2,6-Dinitrophenol
Dinitrophenols	20A100	Dinitrophenols
2,6-Dinitrotoluene	17A081	2,6-Dinitrotoluene
3,4-Dinitrotoluene	17A082	3,4-Dinitrotoluene
2,3-Dinitrotoluene	17A083	2,3-Dinitrotoluene
2,4-Dinitrotoluene	17A084	2,4-Dinitrotoluene
2,5-Dinitrotoluene	17A085	2,5-Dinitrotoluene
3,5-Dinitrotoluene	17A086	3,5-Dinitrotoluene
Dinitrotoluenes	17A080	Dinitrotoluenes
Dioctylester o-benzenedicarboxylic acid	08D300	Di-2-ethylhexyl phthalate
Dioctylester phthalic acid	08D300	Di-2-ethylhexyl phthalate
1,4-Dioxane	03B020	1,4-Dioxane
p-Dioxane	03B020	1,4-Dioxane
1,3-Dioxane	03B040	1,3-Dioxane
Dipentylnitrosamine	12A100	N-Nitrosodipentylamine
Diphenyl	15A160	Biphenyl
Diphenyl sulfide	13B060	Diphenyl sulfide

COMPOUND/ELEMENT		PREFERRED NAME
Diphenyl thioether	13B060	Diphenyl sulfide
1,2-Diphenylbenzene	15B161	o-Terphenyl
1,3-Diphenylbenzene	15B162	m-Terphenyl
1,4-Diphenylbenzene	15B163	p-Terphenyl
4,4'-Diphenylbiphenyl	15B060	4,4'-Diphenylbiphenyl
Diphenylene oxide	24B020	Dibenzofuran
Diphenylene sulfide	25B060	Dibenzothiophene
4-4'-Diphenylenediamine	10C140	Benzidine
Diphenyleneimine	23C080	Carbazole
Diphenylenemethane	22A020	Fluorene
1,2-Diphenylhydrazine	11B080	1,2-Diphenylhydrazine
Diphenylnitrosamine	12B040	N-Nitrosodiphenylamine
Dipropyl	01A141	n-Hexane
Dipropyl methane	01A181	n-Heptane
Disubstituted, polysubstituted alkyl pyridines	23A140	Disubstituted, polysubstituted alkyl pyridines
Divinyl	01B082	1,3-Butadiene
Divinylene oxide	24A020	Furan
Divinyleneimene	23C020	Pyrrole
DMBA	21B060	7,12-Dimethylbenz(a)anthracene
DMSO	14B020	Dimethyl sulfoxide
n-Dodecane	01A260	n-Dodecane
Dodecanoic acid	08A104	Lauric acid
Dodecylene	01A260	n-Dodecane
Durene	15B203	1,2,4,5-Tetramethylbenzene
Endo-1,7,7-trimethyl bicyclo[2.2.1]heptan-2-ol	05B120	Borneol
Endo-2-bornanol	05B120	Borneol
Endo-2-camphanol	05B120	Borneol
Endo-2-hydroxy camphane	05B120	Borneol
Epichlorhydrin	04A050	Epichlorhydrin
Epihydrin alcohol	06B020	2,3-Epoxy-1-propanol
2,3-Epoxy-1-propanol	06B020	2,3-Epoxy-1-propanol
1,4-Epoxybutane	03A060	Tetrahydrofuran
Erythrene	01B082	1,3-Butadiene
Ethanal	07A040	Acetaldehyde
Ethanamide	08C040	Acetamide
Ethanamine	10A040	Ethylamine
Ethane	01A040	Ethane
1,2-Ethanediamine	10A080	1,2-Diaminoethane
1,2-Ethanediol	06A020	Ethylene glycol
Ethanenitrile	09A020	Acetonitrile
Ethanethiol	13A040	Ethanethiol
Ethanoic acid	08A040	Acetic acid
Ethanol	05A040	Ethanol
Ethanolamine	10A060	Ethanolamine
Ethene	01B020	Ethylene
Ethenylbenezene	15A080	Styrene
Ethine	01C020	Acetylene
Ethyl acetate	08D040	Ethyl acetate
Ethyl acrylate	08D060	Ethyl acrylate
Ethyl adipate	08D200	Diethyl adipate
Ethyl alcohol	05A040	Ethanol
Ethyl aldehyde	07A040	Acetaldehyde
Ethyl benzene	15A060	Ethyl benzene
Ethyl benzol	15A060	Ethyl benzene
Ethyl chloride	02A250	Ethyl chloride
Ethyl cresols	18A160	Ethyl cresols
Ethyl cyanate	09A060	1-Cyanoethane
Ethyl cyanide	09A060	1-Cyanoethane
Ethyl d-carboethoxyvalerate	08D200	Diethyl adipate
Ethyl hydride	01A040	Ethane
Ethyl mercaptan	13A040	Ethanethiol
Ethyl methyl pyridines	23A120	Collidines
Ethyl methylphenols	18A160	Ethyl cresols
1-Ethyl naphthalene	21A043	1-Ethyl naphthalene
2-Ethyl naphthalene	21A044	2-Ethyl naphthalene
Ethyl phosphate	26A020	Triethyl phosphate

COMPOUND/ELEMENT		PREFERRED NAME
Ethyl propenoate	08D060	Ethyl acrylate
Ethyl thioalcohol	13A040	Ethanethiol
2-Ethyl-benzo(c)phenanthrene	21B108	2-Ethyl-benzo(c)phenanthrene
6-Ethyl-benzo(c)phenanthrene	21B109	6-Ethyl-benzo(c)phenanthrene
N-Ethyl-ethanamine	10B080	Diethylamine
6-Ethyl-m-cresol	18A161	6-Ethyl-m-cresol
4-Ethyl-o-cresol	18A162	4-Ethyl-o-cresol
2-Ethyl-p-cresol	18A163	2-Ethyl-p-cresol
6-Ethyl-2-methyl phenol	18A161	6-Ethyl-m-cresol
5-Ethyl-2-methylpyridine	23A121	5-Ethyl-2-methylpyridine
4-Ethyl-3-methyl phenol	18A162	4-Ethyl-o-cresol
2-Ethyl-4-methyl phenol	18A163	2-Ethyl-p-cresol
2-Ethyl-4-methyl-1,3-dioxolane	03B060	2-Ethyl-4-methyl-1,3-dioxolane
3-Ethyl-6-methylpyridine	23A121	5-Ethyl-2-methylpyridine
Ethylacetylene	01C061	1-Butyne
Ethylamine	10A040	Ethylamine
bis-2-Ethylbutyl adipic acid ester	08D240	Di-2-ethylbutyl adipate
Ethyldimethylmethane	01A102	Isopentane
Ethylene	01B020	Ethylene
Ethylene chloride	02A260	1-2-Dichloroethane
Ethylene dichloride	02A260	1,2-Dichloroethane
Ethylene glycol	06A020	Ethylene glycol
Ethylene tetrachloride	02B080	Tetrachloroethene
Ethylenediamine	10A080	1,2-Diaminoethane
1,2-Ethylenedicarboxylic acid	08A060	Maleic acid
cis-1,2-Ethylenedicarboxylic acid	08A060	Maleic acid
Ethyleneimine	10B020	Ethyleneimine
1,8-Ethylenenaphthalene	21A100	Acenaphthene
E-Ethylethanamine	10B080	Diethylamine
Ethylethylene	01B061	1-Butene
bis(2-Ethylhexyl)adipate	08D260	Di-2-ethylhexyl adipate
Ethylhydroxy benzenes	18A080	Ethylphenols
Ethylisobutylmethane	01A182	Isoheptane
Ethylmethyl acetaldehyde	07A121	2-Methylbutanal
Ethylmethylamine	10B060	Ethylmethylamine
o-Ethylphenol	18A081	o-Ethylphenol
2-Ethylphenol	18A081	o-Ethylphenol
m-Ethylphenol	18A082	m-Ethylphenol
3-Ethylphenol	18A082	m-Ethylphenol
p-Ethylphenol	18A083	p-Ethylphenol
4-Ethylphenol	18A083	p-Ethylphenol
Ethylphenols	18A080	Ethylphenols
2-Ethylpyridine	23A061	2-Ethylpyridine
3-Ethylpyridine	23A062	3-Ethylpyridine
4-Ethylpyridine	23A063	4-Ethylpyridine
Ethylsulfide	13B040	Diethyl sulfide
Ethyne	01C020	Acetylene
Exo-1,7,7-trimethyl-bicyclo [2.2.2]heptan-2-ol	05B140	Isoborneol
Exo-2-bornanol	05B140	Isoborneol
Exo-2-camphanol	05B140	Isoborneol
Fluoranthene	22B040	Fluoranthene
Fluorene	22A020	Fluorene
2-Fluorenol	18C120	2-Hydroxyfluorene
Fluorotrichloromethane	02A220	Trichlorofluoromethane
Formaldehyde	07A020	Formaldehyde
Formamide	08C020	Formamide
Formic acid	08A020	Formic acid
Formic acid amide	08C020	Formamide
Formosa camphor	07B100	Camphor
Formylamine	08C020	Formamide
Freon 11	02A220	Trichlorofluoromethane
Furan	24A020	Furan
Furfurane	24A020	Furan
Glycidol	06B020	2,3-Epoxy-1-propanol
Glycidyl alcohol	06B020	2,3-Epoxy-1-propanol
Glycol dichloride	02A260	1,2-Dichloroethane

COMPOUND/ELEMENT		PREFERRED NAME
Glycolic acid	08B020	Hydroxyacetic acid
Grain alcohol	05A040	Ethanol
Guaiacol	18A060	2-Methoxyphenol
Guaiene	21A082	2,3-Dimethyl naphthalene
Hemimellitene	15B181	1,2,3-Trimethylbenzene
Hendecane	01A242	n-Undecane
n-Heptane	01A181	n-Heptane
Heptanes	01A180	Heptanes
1-Heptene	01B201	1-Heptene
cis-2-Heptene	01B202	cis-2-Heptene
trans-2-Heptene	01B203	trans-2-Heptene
cis-3-Heptene	01B204	cis-3-Heptene
4-Heptene	01B204	cis-3-Heptene
trans-3-Heptene	01B205	trans-3-Heptene
4-Heptene	01B205	trans-3-Heptene
Heptenes	01B200	Heptenes
Heptyl hydride	01A181	n-Heptane
a-Heptylene	01B201	1-Heptene
B-Heptylene	01B202	cis-2-Heptene
g-Heptylene	01B204	cis-3-Heptene
g-Heptylene	01B205	trans-3-Heptene
Hexabenzobenzene	21D100	Coronene
Hexachloro-1,3-butadiene	02B120	Hexachlorobutadiene
Hexachlorobenzene	16A162	Hexachlorobenzene
Hexachlorobutadiene	02B120	Hexachlorobutadiene
Hexachlorocyclohexane	02A380	Hexachlorocyclohexane
1a,2a,3b,4a,5a,6b-Hexachlorocyclohexane	02A380	Hexachlorocyclohexane
Hexachlorocyclopentadiene	02B140	Hexachlorocyclopentadiene
Hexachloroethane	02A320	Hexachloroethane
Hexadecanoic acid	08A122	Palmitic acid
Hexadecyclic acid	08A122	Palmitic acid
Hexahydroaniline	10A160	Cyclohexylamine
Hexahydrobenzene	01A160	Cyclohexane
Hexamethylene	01A160	Cyclohexane
Hexanaphthene	01A160	Cyclohexane
Hexanaphthylene	01B160	Cyclohexene
n-Hexane	01A141	n-Hexane
Hexane dioic acid	08A180	Adipic acid
6-Hexanelactam	08C060	6-Hexanelactam
Hexanes	01A140	Hexanes
Hexanoic acid	08A101	Caproic acid
1-Hexene	01B141	1-Hexene
Hexene	01B141	1-Hexene
cis-2-Hexene	01B142	cis-2-Hexene
trans-2-Hexene	01B143	trans-2-Hexene
cis-3-Hexene	01B144	cis-3-Hexene
trans-3-Hexene	01B145	trans-3-Hexene
Hexenes	01B140	Hexenes
Hexyl hydride	01A141	n-Hexane
Hexylene	01B141	1-Hexene
Hydracrylic acid-b-lactone	08B060	b-Propiolactone
Hydrazobenzene	11B080	1,2-Diphenylhydrazine
Hydrindene	15B020	Indan
Hydroquinol	18B060	1,4-Dihydroxybenzene
Hydroquinone	18B060	1,4-Dihydroxybenzene
2-Hydroxy anisole	18A060	2-Methoxyphenol
4-Hydroxy butanoic acid lactone	08B080	g-Butyrolactone
3-Hydroxy propionic acid lactone	08B060	b-Propiolactone
2-Hydroxy propylamine	10A123	1-Amino-2-propanol
3-Hydroxy-1,2-epoxypropane	06B020	2,3-Epoxy-1-propanol
1-Hydroxy-2-methoxybenzene	18A060	2-Methoxyphenol
1-Hydroxy-2-methyl glutaronitrile	09A100	1,3-Dicyano-1-hydroxybutane
Hydroxyacetic acid	08B020	Hydroxyacetic acid
Hydroxybenzene	18A020	Phenol
2-Hydroxybenzoic acid	08B041	2-Hydroxybenzoic acid
o-Hydroxybenzoic acid	08B041	2-Hydroxybenzoic acid

COMPOUND/ELEMENT		PREFERRED NAME
3-Hydroxybenzoic acid	08B042	3-Hydroxybenzoic acid
4-Hydroxybenzoic acid	08B043	4-Hydroxybenzoic acid
p-Hydroxybenzoic acid	08B043	4-Hydroxybenzoic acid
Hydroxybenzoic acids	08B040	Hydroxybenzoic acids
Hydroxybiphenyls	18A100	Phenylphenols
2-Hydroxydibenzofuran	18C140	2-Hydroxydibenzofuran
Hydroxyethanoic acid	08B020	Hydroxyacetic acid
2-Hydroxyethylamine	10A060	Ethanolamine
2-Hydroxyfluorene	18C120	2-Hydroxyfluorene
Hydroxyhydrindene	18C080	Indanols
Hydroxyindan	18C080	Indanols
a-Hydroxynaphthalene	18C020	1-Naphthol
2-Hydroxynaphthalene	18C040	2-Naphthol
2-Hydroxynitrobenzene	20A020	2-Nitrophenol
1-Hydroxyphenanthrene	18C061	1-Hydroxyphenanthrene
2-Hydroxyphenanthrene	18C062	2-Hydroxyphenanthrene
3-Hydroxyphenanthrene	18C063	3-Hydroxyphenanthrene
4-Hydroxyphenanthrene	18C064	4-Hydroxyphenanthrene
9-Hydroxyphenanthrene	18C065	9-Hydroxyphenanthrene
Hydroxyphenanthrenes	18C060	Phenanthrols
o-Hydroxyphenol	18B020	Catechol
2-Hydroxyphenol	18B020	Catechol
1-Hydroxypropane	05A060	1-Propanol
2-Hydroxypropane	05B020	2-Propanol
3-Hydroxypropylene oxide	06B020	2,3-Epoxy-1-propanol
a-Hydroxytoluene	05A140	Benzyl alcohol
Hydroxytoluene	18A040	Cresols
Indan	15B020	Indan
1-Indanol	18C081	1-Indanol
4-Indanol	18C082	4-Indanol
5-Indanol	18C083	5-Indanol
Indanols	18C080	Indanols
Indene	22A010	Indene
11-Indeno(1,2-b)quinoline	23B280	2,3-Benz-4-azafluorene
Indeno(1,2,3-cd)pyrene	22D020	Indeno(1,2,3-cd)pyrene
Indeno(1,2,3-ij)isoquinoline	23B300	Indeno(1,2,3-ij)isoquinoline
Indole	23C040	Indole
Indonaphthene	22A010	Indene
Iodomethane	02A060	Methyl Iodide
IP	22D020	Indeno(1,2,3-cd)pyrene
Isoacetophorone	07B080	Isophorone
Isoamyl acetate	08D143	Isoamyl acetate
sec-Isoamyl alcohol	05B063	3-Methyl-2-butanol
Isoamyl alsohol	05A124	3-Methyl-1-butanol
a-Isoamyl hydride	01A102	Isopentane
Isoborneol	05B140	Isoborneol
Isobutane	01A082	Isobutane
Isobutanol	05A100	Isobutyl alcohol
Isobutene	01B064	Isobutylene
Isobutyl acetate	08D123	Isobutyl acetate
Isobutyl alcohol	05A100	Isobutyl alcohol
Isobutylene	01B064	Isobutylene
Isodurene	15B202	1,2,3,5-Tetramethylbenzene
Isoheptane	01A182	Isoheptane
Isohexane	01A142	Isohexane
Isononane	01A222	Isononane
Isooctane	01A202	Isooctane
Isopentaldehyde	07A122	3-Methylbutanal
Isopentane	01A102	Isopentane
Isophorone	07B080	Isophorone
Isopropanolamine	10A123	1-Amino-2-propanol
2-Isopropoxy propane	03A020	Isopropyl ether
Isopropyl acetate	08D102	Isopropyl acetate
Isopropyl alcohol	05B020	2-Propanol
Isopropyl benzene	15A120	Isopropyl benzene
Isopropyl benzol	15A120	Isopropyl benzene

COMPOUND/ELEMENT		PREFERRED NAME
Isopropyl ether	03A020	Isopropyl ether
Isopropyl methyl carbinol	05B063	3-Methyl-2-butanol
Isopropyl-benzo(c)phenanthrene	21B112	Isopropyl-benzo(c)phenanthrene
Isopropylidene chloride	02A344	2,2-Dichloropropane
Isopropylmercaptan	13A062	Propane-2-thiol
Isoquinoline	23B021	Isoquinoline
Isovaleral	07A122	3-Methylbutanal
Isovaleraldehyde	07A122	3-Methylbutanal
Isovaleric aldehyde	07A122	3-Methylbutanal
Lauric acid	08A104	Lauric acid
Leucoline	23B022	Isoquinoline
Lindane	02A380	Hexachlorocyclohexane
2,3-Lutidine	23A141	2,3-Dimethylpyridine
2,4-Lutidine	23A142	2,4-Dimethylpyridine
2,5-Lutidine	23A143	2,5-Dimethylpyridine
2,6-Lutidine	23A144	2,6-Dimethylpyridine
3,4-Lutidine	23A145	3,4-Dimethylpyridine
M.E.K.	07B060	Butanone
Maleic acid	08A060	Maleic acid
Maleinic acid	08A060	Maleic acid
Malenic acid	08A060	Maleic acid
Marsh gas	01A020	Methane
p-Menth-1-en-8-ol	05C060	a-Terpineol
p-Mentha-6,8-dien-2-one	07B181	Carvone (d or 1)
Mercaptobenzene	13A100	Benzenethiol
1-Mercaptopropanol	13A061	Propane-1-thiol
Mesitol	18A181	2,4,6-Trimethyl phenol
Mesitylene	15B183	1,3,5-Trimethylbenzene
Methacrylic acid	08D080	Methyl methacrylate
2-Methaloctane	01A222	Isononane
Methanal	07A020	Formaldehyde
Methanamide	08C020	Formamide
Methane	01A020	Methane
Methane trichloride	02A100	Chloroform
Methanecarboxamide	08C040	Acetamide
Methanethiol	13A020	Methanethiol
Methanoic acid	08A020	Formic acid
Methanol	05A020	Methanol
1-Methoxy-2-nitrobenzene	17B021	1-Methoxy-2-nitrobenzene
1-Methoxy-3-nitrobenzene	17B022	1-Methoxy-3-nitrobenzene
1-Methoxy-4-nitrobenzene	17B023	1-Methoxy-4-nitrobenzene
Methoxyaniline	10C080	Anisidines
m-Methoxyaniline	10C082	m-Anisidine
2-Methoxybiphenyl	03A040	2-Methoxybiphenyl
Methoxynitrobenzenes	17B020	Methoxynitrobenzenes
2-Methoxyphenol	18A060	2-Methoxyphenol
Methyl a-methylacrylate	08D080	Methyl methacrylate
Methyl acetate	08D020	Methyl acetate
Methyl alcohol	05A020	Methanol
Methyl aldehyde	07A020	Formaldehyde
Methyl anilines	10C040	Aminotoluenes
Methyl benzoate	08D160	Methyl benzoate
2-Methyl benzothiazole	23D040	2-Methyl benzothiazole
Methyl bromide	02A020	Methyl bromide
Methyl butene	01B101	1-Pentene
Methyl chloride	02A040	Methyl chloride
Methyl chloroform	02A280	Trichloroethane
Methyl chloromethyl ether	04A020	Chloromethyl methyl ether
4-Methyl chrysene	21B141	4-Methyl chrysenes
5-Methyl chrysene	21B142	5-Methyl chrysene
Methyl chrysenes	21B140	Methyl chrysenes
Methyl cyanide	09A020	Acetonitrile
Methyl diphenyl ether	03A040	2-Methoxybiphenyl
Methyl dithiomethane	13B080	Methyldisulfide
Methyl ester	08D080	Methyl methacrylate
Methyl ester of benzoic acid	08D160	Methyl benzoate

COMPOUND/ELEMENT		PREFERRED NAME
1-Methyl ethyl benzene	15A120	Isopropyl benzene
Methyl ethyl ketone	07B060	Butanone
Methyl glycol	06A040	Propylene glycol
Methyl hydride	01A020	Methane
Methyl iodide	02A060	Methyl iodide
Methyl mercaptan	13A020	Methanethiol
Methyl methacrylate	08D080	Methyl methacrylate
Methyl methylacrylate	08D080	Methyl methacrylate
1-Methyl naphthalene	21A041	1-Methyl naphthalene
2-Methyl naphthalene	21A042	2-Methyl napthalene
1-Methyl phenanthrene	21A201	1-Methyl phenanthrene
3-Methyl phenanthrene	21A202	3-Methyl phenanthrene
Methyl phenanthrenes	21A200	Methyl phenanthrenes
Methyl phenyl nitrosamine	12B020	N-Methyl-N-nitrosoaniline
Methyl propyl carbinol	05B061	2-Pentanol
Methyl sulfide	13B020	Dimethyl sulfide
Methyl sulfoxide	14B020	Dimethyl sulfoxide
a-Methyl-a-hydroxy toluene	05B100	1-Phenylethanol
1-Methyl-benzo(c)phenanthrene	21B102	1-Methyl-benzo(c)phenanthrene
2-Methyl-benzo(c)phenanthrene	21B103	2-Methyl-benzo(c)phenanthrene
5-Methyl-benzo(c)phenanthrene	21B104	5-Methyl-benzo(c)phenanthrene
6-Methyl-benzo(c)phenanthrene	21B105	6-Methyl-benzo(c)phenanthrene
7-Methyl-benzo(c)phenanthrene	21B106	7-Methyl-benzo(c)phenanthrene
8-Methyl-henzo(c)phenanthrene	21B107	8-Methyl-benzo(c)phenanthrene
2-Methyl-methyl ester	08D080	Methyl methacrylate
N-Methyl-N-nitrosoaniline	12B020	N-Methyl-N-nitrosoaniline
N-Methyl-N-nitrosobenzenamine	12B020	N-Methyl-N-nitrosoaniline
2-Methyl-1-butanol	05A122	2-Methyl-1-butanol
3-Methyl-1-butanol	05A124	3-Methyl-1-butanol
3-Methyl-1-butanol acetate	08D143	Isoamyl acetate
2-Methyl-1-propanol	05A100	Isobutyl alcohol
Methyl-1,2-benzophenanthrene	21B140	Methyl chrysenes
3-Methyl-2-butanol	05B063	3-Methyl-2-butanol
2-Methyl-2-butanol	05C040	t-Pentanol
1-Methyl-2-chlorobenzene	16A180	2-Chlorotoluene
2-Methyl-2-phenyl propane	15A143	tert-Butyl benzene
2-Methyl-2-phenyl propane	15A143	tert-Butyl benzene
2-Methyl-2-propanol	05C020	t-Butyl alcohol
2-Methyl-4,6-dinitrophenol	20B020	4,6-Dinitro-o-cresol
2-Methyl-5-(1-methylethenyl)-2-cyclohexene-1-one	07B181	Carvone (d or 1)
Methylacetylene	01C040	Propyne
Methylallene	01B081	1,2-Butadiene
Methylamine	10A020	Methylamine
Methylbenzene	15A040	Toluene
Methylbenzene carboxylate	08D160	Methyl benzoate
2-Methylbenzofuran	24A061	2-Methylbenzofuran
3-Methylbenzofuran	24A062	3-Methylbenzofuran
5-Methylbenzofuran	24A063	5-Methylbenzofuran
7-Methylbenzofuran	24A064	7-Methylbenzofuran
Methylbenzofurans	24A060	Methylbenzofurans
a-Methylbenzyl alcohol	05B100	1-Phenylethanol
2-Methylbutanal	07A121	2-Methylbutanal
3-Methylbutanal	07A122	3-Methylbutanal
Methylbutanals	07A120	Methylbutanals
2-Methylbutane	01A102	Isopentane
2-Methylbutyraldehyde	07A121	2-Methylbutanal
a-Methylbutyraldehyde	07A121	2-Methylbutanal
3-Methylbutyraldehyde	07A122	3-Methylbutanal
3-Methylcarbazole	23C101	3-Methylcarbazole
9-Methylcarbazole	23C102	9-Methylcarbazole
Methylcarbazoles	23C100	Methylcarbazoles
Methylcatechol	18A060	2-Methoxyphenol
20-Methylchlolanthrene	21B080	3-Methylcholanthrene
3-Methylchlolanthrene	21B080	3-Methylcholanthrene
Methyldibenzopyrrole	23C100	Methylcarbazoles
Methyldibenzopyrrole	23C101	3-Methylcarbazole

COMPOUND/ELEMENT		PREFERRED NAME
9-Methyldibenzopyrrole	23C102	9-Methylcarbazole
Methyldiphenylenimine	23C100	Methylcarbazoles
3-Methyldiphenylenimine	23C101	3-Methylcarbazole
9-Methyldiphenylenimine	23C102	9-Methylcarbazole
Methyldisulfide	13B080	Methyldisulfide
Methylene bichloride	02A080	Methylene chloride
4,4'-Methylene bis(2-chloroaniline)	10C180	4,4'-Methylene bis(2-chloroaniline)
Methylene chloride	02A080	Methylene chloride
Methylene oxide	07A020	Formaldehyde
Methylethylbromoethane	02A362	2-Bromobutane
Methylethylene glycol	06A040	Propylene glycol
2-Methylheptane	01A202	Isooctane
2-Methylhexane	01A182	Isoheptane
Methylhydrazine	11B020	Monomethylhydrazine
2-Methylindole	23C061	2-Methylindole
3-Methylindole	23C062	3-Methylindole
Methylindoles	23C060	Methylindoles
3-Methyllepidine	23B064	3,4-Dimethylquinoline
Methylmethane	01A040	Ethane
Methylnitrobenzenes	17A040	Nitrotoluenes
Methylnitrosophenylamine	12B020	N-Methyl-N-nitrosoaniline
2-Methylpentane	01A142	Isohexane
Methylphenol	18A040	Cresols
Methylphenylcarbinol	05B100	1-Phenylethanol
2-Methylpropane	01A082	Isobutane
2-Methylpropene	01B064	Isobutylene
1-Methylpropyl benzene	15A142	sec-Butyl benzene
1-Methylpropyl benzene	15A142	sec-Butyl benzene
a-Methylpropylethanoate	08D122	sec-Butyl acetate
b-Methylpropylethanoate	08D123	Isobutyl acetate
1-Methylpyrene	21B200	1-Methylpyrene
2-Methylpyridine	23A041	2-Methylpyridine
3-Methylpyridine	23A042	3-Methylpyridine
4-Methylpyridine	23A042	4-Methylpyridine
Methylpyridines	23A040	Picolines
3-Methylquinaldine	23B061	2,3-Dimethylquinoline
6-Methylquinaldine	23B062	2,6-Dimethylquinoline
2-Methylquinoline	23B040	2-Methylquinoline
Methylthiomethane	13B020	Dimethyl sulfide
2-Methylthiophene	25A041	2-Methylthiophene
3-Methylthiophene	25A042	3-Methylthiophene
Methylthiophenes	25A040	Methylthiophenes
Mono-n-propylamine	10A100	1-Aminopropane
Monoalkyl naphthalenes	21A040	Monoalkyl naphthalenes
Monoallyamine	10A110	3-Aminopropene
Monobromomethane	02A020	Methyl Bromide
Monochloroethane	02A250	Ethyl chloride
Monochloromethyl ether	04A020	Chloromethyl methyl ether
Monomethylamine	10A020	Methylamine
Monomethylhydrazine	11B020	Monomethylhydrazine
Monosubstituted alkyl pyridines	23A060	Monosubstituted alkyl pyridines
Morpholine	10B100	Morpholine
Myristic acid	08A121	Myristic acid
Naphthacene	21B020	Naphthacene
a-Naphthacridine	23B200	Benz(c)acridine
Naphthalene	21A020	Naphthalene
1-Naphthalenol	18C020	1-Naphthol
Naphthalin	21A020	Naphthalene
Naphthaline	21A020	Naphthalene
Naphthene	21A020	Naphthalene
Naphtho(1,2-b)furan	24B041	Naphtho(1,2-b)furan
Naphtho(2,1-b)furan	24B042	Naphtho(2,1-b)furan
Naphtho(2,3-b)furan	24B043	Naphtho(2,3-b)furan
Naphtho-1',2':2,3-anthracene	21C020	1,2-Benzonaphthacene
Naphthofurans	24B040	Naphthofurans
1-Naphthol	18C020	1-Naphthol

COMPOUND/ELEMENT		PREFERRED NAME
a-Naphthol	18C020	1-Naphthol
2-Naphthol	18C040	2-Naphthol
b-Naphthol	18C040	2-Naphthol
a-Naphthonitrile	09B041	a-Naphthonitrile
1-Naphthonitrile	09B041	a-Naphthonitrile
b-Naphthonitrile	09B042	b-Naphthonitrile
2-Naphthonitrile	09B042	b-Naphthonitrile
Naphthonitriles	09B040	Naphthonitriles
Naphthopyridine	23B140	Benzo(f)quinoline
b-Naphthoquinoline	23B140	Benzo(f)quinoline
a-Naphthoquinoline	23B160	Benzo(h)quinoline
b-Naphthyl hydroxide	18C040	2-Naphthol
1-Naphthylamine	10C200	1-Aminonaphthalene
a-Naphthylamine	10C200	1-Aminonaphthalene
2-Naphthylamine	10C220	2-Aminonaphthalene
b-Naphthylamine	10C220	2-Aminonaphthalene
Naphthyleneethylene	21A100	Acenaphthene
2,3-Naptho-2,3-phenanthrene	21C020	1,2-Benzonaphthacene
Necatorina	02A240	Carbon Tetrachloride
Neopentane	01A103	Neopentane
Neopentyl alcohol	05A123	2,2-Dimethyl-1-propanol
Nitroanisoles	17B020	Methoxynitrobenzenes
Nitrobenzene	17A020	Nitrobenzene
4-Nitrobiphenyl	17A060	4-Nitrobiphenyl
p-Nitrobiphenyl	17A060	4-Nitrobiphenyl
p-Nitrochlorobenzene	17B060	1-Chloro-4-nitrobenzene
4-Nitrodiphenyl	17A060	4-Nitrobiphenyl
2-Nitrophenol	20A020	2-Nitrophenol
o-Nitrophenol	20A020	2-Nitrophenol
3-Nitrophenol	20A040	3-Nitrophenol
m-Nitrophenol	20A040	3-Nitrophenol
4-Nitrophenol	20A060	4-Nitrophenol
p-Nitrophenol	20A060	4-Nitrophenol
Nitrophenyl methyl ethers	17B020	Methoxynitrobenzenes
N-Nitroso-N-dipropylamine	12A060	N-Nitrosodipropylamine
N-Nitroso-N-methylaniline	12B020	N-Methyl-N-nitrosoaniline
N-Nitrosodiethylamine	12A040	N-Nitrosodiethylamine
N-Nitrosodiisopropylamine	12A080	N-Nitrosodiisopropylamine
Nitrosodiisopropylamine	12A080	N-Nitrosodiisopropylamine
N-Nitrosodimethylamine	12A020	N-Nitrosodimethylamine
N-Nitrosodipentylamine	12A100	N-Nitrosodipentylamine
N-Nitrosodiphenylamine	12B040	N-Nitrosodiphenylamine
N-Nitrosodipropylamine	12A060	N-Nitrosodipropylamine
Nitrosomethylaniline	12B020	N-Methyl-N-nitrosoaniline
N-Nitrosophenylamine	12B020	N-Methyl-N-nitrosoaniline
2-Nitrotoluene	17A041	2-Nitrotoluene
3-Nitrotoluene	17A042	3-Nitrotoluene
4-Nitrotoluene	17A043	4-Nitrotoluene
Nitrotoluenes	17A040	Nitrotoluenes
Nitrous diisopropylamide	12A080	N-Nitrosodiisopropylamine
Nitrous diphenylamide	12B040	N-Nitrosodiphenylamine
Nitrous dipropyl amide	12A060	N-Nitrosodipropylamine
n-Nonane	01A221	n-Nonane
Nonanes	01A220	Nonanes
Nonyl alcohol	05B080	2,6-Dimethyl-4-heptanol
Octadecanoic acid	08A123	Stearic acid
cis-9-Octadecanoic acid	08A140	Oleic acid
n-Octane	01A201	n-Octane
Octanes	01A200	Octanes
Octanoic acid	08A102	Caprylic acid
Octyl phthalate	08D300	Di-2-ethylhexyl phthalate
Oleic acid	08A140	Oleic acid
2-Oxetanone	08B060	b-Propiolactone
2-Oxobovane	07B100	Camphor
Oxole	24A020	Furan
Oxybenzene	18A020	Phenol

COMPOUND/ELEMENT		PREFERRED NAME
1,1'-Oxybis (2-chloroethane)	04B080	2,2'-Dichlorodiethyl ether
Oxybis[chloromethane]	04B020	1,1'-Dichloromethyl ether
2,2'-Oxybis[propane]	03A020	Isopropyl ether
Palmitic acid	08A122	Palmitic acid
b-Parvolone	23A146	2,3,4,6-Tetramethylpyridine
PCB's	16A220	Polychlorinated biphenyls
Pentachlorophenol	19A060	Pentachlorophenol
Pentamethylene	01A120	Cyclopentane
n-Pentane	01A101	n-Pentane
Pentanes	01A100	Pentanes
Pentanoic acid	08A080	Valeric acid
n-Pentanol	05A121	n-Pentanol
1-Pentanol	05A121	n-Pentanol
2-Pentanol	05B061	2-Pentanol
3-Pentanol	05B062	3-Pentanol
t-Pentanol	05C040	t-Pentanol
Pentanols, (primary)	05A120	Pentanols, (primary)
Pentanols, (secondary)	05B060	Pentanols, (secondary)
1-Pentene	01B101	1-Pentene
cis-2-Pentene	01B102	cis-2-Pentene
trans-2-Pentene	01B103	trans-2-Pentene
Pentenes	01B100	Pentenes
2-Pentyl acetate	08D142	sec-Amyl acetate
t-Pentyl alcohol	05C040	t-Pentanol
1-Pentylene	01B101	1-Pentene
Perchlorobenzene	16A162	Hexachlorobenzene
Perchlorocyclopentadiene	02B140	Hexachlorocyclopentadiene
Perchloroethane	02A320	Hexachloroethane
Perchloroethylene	02B080	Tetrachloroethene
Perchloromethane	02A240	Carbon Tetrachloride
Perchloromethanethiol	13A140	Perchloromethanethiol
Perchloromethyl mercaptan	13A140	Perchloromethanethiol
Periethylenenaphthalene	21A100	Acenaphthene
Perylene	21C140	Perylene
Phenanthrene	21A180	Phenanthrene
Phenanthridine	23B120	Phenanthridine
Phenanthro(9,10-b)furan	24B080	Phenanthro(9,10-b)furan
Phenanthrols	18C060	Phenanthrols
Phenanthrylene methane	22B080	Cyclopenta(def)phenanthrene
Phene	15A020	Benzene
Phenethyl alcohol	05A160	Phenethyl alcohol
B-Phenethyl alcohol	05A160	Phenethyl alcohol
a-Phenethyl alcohol	05B100	1-Phenylethanol
Phenic acid	18A020	Phenol
Phenol	18A020	Phenol
o-Phenyl anisole	03A040	2-Methoxybiphenyl
Phenyl benzoate	08D180	Phenyl benzoate
Phenyl bromide	16A040	Bromobenzene
1-Phenyl butane	15A141	n-Butyl benzene
2-Phenyl butane	15A142	sec-Butyl benzene
2-Phenyl butane	15A142	sec-Butyl benzene
Phenyl chloride	16A020	Chlorobenzene
Phenyl cyanide	09B020	Benzonitrile
Phenyl formic acid	08A160	Benzoic acid
Phenyl hydroxide	18A020	Phenol
Phenyl mercaptan	13A100	Benzenethiol
Phenyl methanol	05A140	Benzyl alcohol
Phenyl methyl ketone	07B120	Acetophenone
1-Phenyl propane	15A100	Propyl benzene
Phenyl pyridines	23A080	Phenyl pyridines
2-Phenyl pyridines	23A081	2-Phenyl pyridines
3-Phenyl pyridines	23A082	3-Phenyl pyridines
4-Phenyl pyridines	23A083	4-Phenyl pyridines
Phenyl sulfide	13B060	Diphenyl sulfide
Phenylaldehyde	07A140	Benzaldehyde
Phenylamine	10C020	Aniline

COMPOUND/ELEMENT		PREFERRED NAME
p-Phenylaniline	10C120	4-Aminobiphenyl
Phenylbenzene	15A160	Biphenyl
Phenylcarbinol	05A140	Benzyl alcohol
p-Phenylenediamine	10C100	1,4-Diaminobenzene
2,3-o-Phenylenepyrene	22D020	Indeno(1,2,3-cd)pyrene
Phenylethane	15A060	Ethyl benzene
2-Phenylethanol	05A160	Phenethyl alcohol
1-Phenylethanol	05B100	1-Phenylethanol
1-Phenylethanone	07B120	Acetophenone
Phenylethylene	15A080	Styrene
Phenylhydride	15A020	Benzene
Phenylic acid	18A020	Phenol
Phenylmethane	15A040	Toluene
Phenylmethyl alcohol	05A140	Benzyl alcohol
1-Phenylnaphthalene	21A061	1-Phenylnaphthalene
2-Phenylnaphthalene	21A062	2-Phenylnaphthalene
Phenylnaphthalenes	21A060	Phenylnaphthalenes
o-Phenylphenol	18A101	o-Phenylphenol
p-Phenylphenol	18A102	p-Phenylphenol
m-Phenylphenol	18A103	m-Phenylphenol
Phenylphenols	18A100	Phenylphenols
2-Phenylpropane	15A120	Isopropyl benzene
Phenylsulfonic acid	14A020	Benzenesulfonic acid
Phenylthiobenzene	13B060	Diphenyl sulfide
Phthalate esters	08D280	Phthalate esters
Phthalic acid	08A200	Phthalic acid
o-Phthalic acid	08A200	Phthalic acid
Picene	21C160	Picene
Picolines	23A040	Picolines
Picramic acid	20A080	2-Amino-4,6-dinitrophenol
Picraminic acid	20A080	2-Amino-4,6-dinitrophenol
Picric acid	20A120	2,4,6-Trinitrophenol
Polyalkyl phenols (MW greater than 135)	18A180	Polyalkyl phenols (MW greater than 135)
Polychlorinated benzenes	16A160	Polychlorinated benzenes
Polychlorinated Biphenyls (PCB's)	16A220	Polychlorinated biphenyls (PCB's)
Prehnitene	15B201	1,2,3,4-Tetramethylbenzene
Propaldehyde	07A080	Propionaldehyde
Propanal	07A080	Propionaldehyde
Propanamine	10A100	1-Aminopropane
Propane	01A060	Propane
Propane	01B040	Propylene
Propane-1-thiol	13A061	Propane-1-thiol
Propane-2-thiol	13A062	Propane-2-thiol
1,2-Propanediol	06A040	Propylene glycol
2-Propanenitrile	09A040	Acrylonitrile
Propanenitrile	09A060	1-Cyanoethane
1-Propanethiol	13A061	Propane-1-thiol
2-Propanethiol	13A062	Propane-2-thiol
Propanethiols	13A060	Propanethiols
Propanoic acid-3-hydroxy lactone	08B060	b-Propiolactone
1-Propanol	05A060	1-Propanol
2-Propanol	05B020	2-Propanol
B-Propanolamine	10A121	2-Amino-1-propanol
Propanolamines	10A120	Propanolamines
Propanolide	08B060	b-Propiolactone
2-Propanone	07B020	Acetone
Propenal	07A060	Acrolein
2-Propene-1-amine	10A110	3-Aminopropene
2-Propenoic acid ethyl ether	08D060	Ethyl acrylate
Propine	01C040	Propyne
b-Propiolactone	08B060	b-Propiolactone
Propionaldehyde	07A080	Propionaldehyde
Propionitrile	09A060	1-Cyanoethane
b-Propiono lactone	08B060	b-Propiolactone
n-Propyl acetate	08D101	n-Propyl acetate
Propyl acetates	08D100	Propyl acetates

COMPOUND/ELEMENT		PREFERRED NAME
n-Propyl alcohol	05A060	1-Propanol
Propyl aldehyde	07A080	Propionaldehyde
Propyl benzene	15A100	Propyl benzene
Propyl cyanide	09A080	Butyronitrile
Propyl nitrosamine	12A060	N-Nitrosodipropylamine
n-Propyl-benzo(c)phenanthrene	21B111	n-Propyl-benzo(c)phenanthrene
Propylacetic acid	08A080	Valeric acid
n-Propylamine	10A100	1-Aminopropane
Propylene	01B040	Propylene
Propylene chloride	02A342	1,2-Dichloropropane
Propylene dichloride	02A342	1,2-Dichloropropane
Propylene glycol	06A040	Propylene glycol
Propylethylene	01B101	1-Pentene
Propylidene chloride	02A341	1,1-Dichloropropane
Propylidene dichloride	02A341	1,1-Dichloropropane
Propylmercaptan	13A061	Propane-1-thiol
Di-n-propylnitrosamine	12A060	N-Nitrosodipropylamine
4-n-Propylpyridine	23A064	4-n-Propylpyridine
Propyne	01C040	Propyne
Pseudobutyl benzene	15A143	tert-Butyl benzene
Pseudobutyl benzene	15A143	tert-Butyl benzene
Pseudobutylene	01B062	cis-2-Butene
Pseudocumene	15B182	1,2,4-Trimethylbenzene
Pyrene	21B180	Pyrene
Pyridine	23A020	Pyridine
a-Pyridylbenzene	23A081	2-Phenyl pyridines
a-Pyridylbenzene	23A081	2-Phenyl pyridines
b-Pyridylbenzene	23A082	3-Phenyl pyridines
g-Pyridylbenzene	23A083	4-Phenyl pyridines
Pyrocatechol	18B020	Catechol
Pyrogallic acid	18B080	1,2,3-Trihydroxybenzene
Pyrogallol	18B080	1,2,3-Trihydroxybenzene
Pyrrole	23C020	Pyrrole
p,p'-Quaterphenyl	15B060	4,4'-Diphenylbiphenyl
Quinaldine	23B040	2-Methylquinoline
Quinol	18B060	1,4-Dihydroxybenzene
Quinoline	23B021	Quinoline
Quinolines	23B020	Quinolines
Resorcinol	18B040	1,3-Dihydroxybenzene
Rubbing alcohol	05B020	2-Propanol
Salicylic acid	08B041	2-Hydroxybenzoic acid
Saturated Long Chain Acids (MW:116-201)	08A100	Saturated Long Chain Acids (MW:116-201)
Saturated Long Chain Acids(MW:228-285)	08A120	Saturated Long Chain Acids(MW:228-285)
Secondary butylamine	10A142	2-Aminobutane
Skatole	23C062	3-Methylindole
Stearic acid	08A123	Stearic acid
Styrene	15A080	Styrene
Styrolene	15A080	Styrêne
Sulfinylbis[methane]	14B020	Dimethyl sulfoxide
Tar camphor	21A020	Naphthalene
Telone	02B103	cis-1,3-Dichloropropene
o-Terphenyl	15B161	o-Terphenyl
m-Terphenyl	15B162	m-Terphenyl
p-Terphenyl	15B163	p-Terphenyl
Terphenyls	15B160	Terphenyls
a-Terpineol	05C060	a-Terpineol
Tertiary butylamine	10A143	2-Amino-2-methylpropane
Tetracene	21B020	Naphthacene
1,1,3,3-Tetrachloro-2-propanone	07C020	Tetrachloroacetone
Tetrachloroacetone	07C020	Tetrachloroacetone
1,1,2,2-Tetrachloroethane	02A300	1,1,2,2-Tetrachloroethane
Tetrachloroethene	02B080	Tetrachloroethene
Tetrachloroethylene	02B080	Tetrachloroethene
Tetrachloromethane	02A240	Carbon Tetrachloride
Tetradecanoic acid	08A121	Myristic acid
n-Tetradecoic acid	08A121	Myristic acid

COMPOUND/ELEMENT		PREFERRED NAME
Tetrahydro-1,4-oxazine	10B100	Morpholine
3a,7,7,7a-Tetrahydro-4,7-methanoindene	01B220	Dicyclopentadiene
3,4,5,6-Tetrahydrobenzene	01B160	Cyclohexene
Tetrahydrobenzene	01B160	Cyclohexene
Tetrahydrofuran	03A060	Tetrahydrofuran
Tetrahydronaphthalene	15B120	Tetrahydronaphthalene
Tetralin	15B120	Tetrahydronaphthalene
Tetraline	15B120	Tetrahydronaphthalene
1,2,3,4-Tetramethylbenzene	15B201	1,2,3,4-Tetramethylbenzene
1,2,3,5-Tetramethylbenzene	15B202	1,2,3,5-Tetramethylbenzene
1,2,4,5-Tetramethylbenzene	15B203	1,2,4,5-Tetramethylbenzene
Tetramethylbenzenes	15B200	Tetramethylbenzenes
Tetramethylmethane	01A103	Neopentane
Tetramethylsuccinonitrile	09A120	Tetramethylsuccinonitrile
Tetraphenyl	15B060	4,4'-Diphenylbiphenyl
Tetrole	24A020	Furan
1-1'-Thiobis[benzene]	13B060	Diphenyl sulfide
1-1'-Thiobisethane	13B040	Diethyl sulfide
Thiobismethane	13B020	Dimethyl sulfide
Thioethylether	13B040	Diethyl sulfide
Thiofuran	25A020	Thiophene
Thionaphthene	25B040	Benzo(b)thiophene
Thiophene	25A020	Thiophene
Thiophenol	13A100	Benzenethiol
2,3-Thioxene	25A061	2,3-Dimethylthiophene
2,4-Thioxene	25A062	2,4-Dimethylthiophene
a,a-Thioxene	25A063	2,5-Dimethylthiophene
TMSN	09A120	Tetramethylsuccinonitrile
Toluene	15A040	Toluene
a-Toluenol	05A140	Benzyl alcohol
Toluidines	10C040	Aminotoluenes
Toluol	15A040	Toluene
o-Toluquinaldine	23B120	2,8-Dimethylquinoline
o-Tolyl chloride	16A180	2-Chlorotoluene
Toxilic acid	08A060	Maleic acid
Tri-m-tolyl phosphate	26B043	Tri-m-tolyl phosphate
Tri-o-cresyl phosphate	260B42	Tri-o-tolyl phosphate
Tri-o-tolyl phosphate	26B041	Tri-o-tolyl phosphate
Tri-p-tolyl phosphate	26B042	Tri-p-tolyl phosphate
Tribenzylene benzene	22D040	Tribenzylene benzene
Tribromomethane	02A160	Bromoform
1,2,4-Trichlorobenzene	16A161	1,2,4-Trichlorobenzene
Trichloroethane	02A280	Trichloroethane
1,1,1-Trichloroethane	02A280	Trichloroethane
1,1,2-Trichloroethane	02A290	1,1,2-Trichloroethane
B-Trichloroethane	02A290	1,1,2-Trichloroethane
Trichloroethylene	02B070	Trichloroethylene
Trichlorofluoromethane	02A220	Trichlorofluoromethane
Trichloromethane	02A100	Chloroform
Trichloromethanethiol	13A140	Perchloromethanethiol
Trichloromonofluoromethane	02A220	Trichlorofluoromethane
2,4,6-Trichlorophenol	19A050	2,4,6-Trichlorophenol
Tricresol phosphate	26B040	Tritolyl phosphate
Triethyl phosphate	26A020	Triethyl phosphate
1,2,3-Trihydroxybenzene	18B080	1,2,3-Trihydroxybenzene
Trimethyl and tetramethyl thiophenes	25A080	Trimethyl and tetramethyl thiophenes
Trimethyl carbinol	05C020	t-Butyl alcohol
2,4,6-Trimethyl phenol	18A181	2,4,6-Trimethyl phenol
3,5,5-Trimethyl-2-cyclohexene-1-one	07B080	Isophorone
a,a,4-Trimethyl-3-cyclohexene-1-methanol	05C060	a-Terpineol
1,2,3-Trimethylbenzene	15B181	1,2,3-Trimethylbenzene
1,2,4-Trimethylbenzene	15B182	1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene	15B183	1,3,5-Trimethylbenzene
Trimethylbenzenes	15B180	Trimethylbenzenes
1,7,7-Trimethylbicyclo[2.2.1]heptan-2-one	07B100	Camphor
Trimethylbromomethane	02A363	2-Bromoisobutane

COMPOUND/ELEMENT		PREFERRED NAME
Trimethylene chloride	02A343	1,3-Dichloropropane
Trimethylmethane	01A082	Isobutane
2,2,4-Trimethylpentane	01A202	Isooctane
Trimethylphenyl methane	15A143	tert-Butyl benzene
Trimethylphenyl methane	15A143	tert-Butyl benzene
Trimethylpyridines	23A120	Collidines
2,3,5-Trimethylthiophene	25A081	2,3,5-Trimethylthiophene
2,4,6-Trinitrophenol	20A120	2,4,6-Trinitrophenol
Triorthocresol phosphate	26B041	Tri-o-tolyl phosphate
Triphenyl phosphate	26B020	Triphenyl phosphate
Triphenylene	21B160	Triphenylene
Tritolyl phosphate	26B040	Tritolyl phosphate
Truxene	22D040	Tribenzylene benzene
TSN	09A120	Tetramethylsuccinonitrile
n-Undecane	01A242	n-Undecane
Unsym-trichlorobenzene	16A161	1,2,4-Trichlorobenzene
Unsymmetrical dimethylhydrazine	11B040	N,N-Dimethylhydrazine
Valerianic acid	08A080	Valeric acid
Valeric acid	08A080	Valeric acid
Vinyl benzene	15A080	Styrene
Vinyl chloride	02B020	Vinyl chloride
Vinyl cyanide	09A040	Acrylonitrile
Vinylidene chloride	02B060	1,1-Dichloroethene
Wood alcohol	05A020	Methanol
o-Xylene	15B081	o-Xylene
m-Xylene	15B082	m-Xylene
p-Xylene	15B083	p-Xylene
o-Xylene chloride	16B041	1,2-bis (Chloromethyl) benzene
m-Xylene chloride	16B042	1-3-bis (Chloromethyl) benzene
p-Xylene chloride	16B043	1,4-bis (Chloromethyl) benzene
Xylenes	15B080	Xylenes
2,3-Xylenol	18A141	2,3-Xylenol
2,4-Xylenol	18A142	2,4-Xylenol
2,5-Xylenol	18A143	2,5-Xylenol
2,6-Xylenol	18A144	2,6-Xylenol
3,5-Xylenol	18A145	3,5-Xylenol
3,4-Xylenol	18A146	3,4-Xylenol
Xylenols	18A140	Xylenols
2,3-Xylidine	10C061	2,3-Xylidine
2,4-Xylidine	10C062	2,4-Xylidine
2,5-Xylidine	10C063	2,5-Xylidine
2,6-Xylidine	10C064	2,6-Xylidine
3,4-Xylidine	10C065	3,4-Xylidine
3,5-Xylidine	10C066	3,5-Xylidine
Xylidines	10C060	Dimethylanilines
Xylol	15B080	Xylenes

MOLECULAR FORMULA INDEX FOR ORGANIC COMPOUNDS ADDRESSED BY MEG'S

CBr_2Cl_2	02A180
CCl_2F_2	02A200
CCl_3F	02A220
CCl_4	02A240
$CHBrCl_2$	02A120
$CHBr_2Cl$	02A140
$CHBr_3$	02A160
$CHCL_3$	02A100
$CHCl_3S$	13A140
CH_2Cl_2	02A080
CH_2O	07A020
CH_2O_2	08A020
CH_2N_2	11A020
CH_3Br	02A020
CH_3Cl	02A040
CH_3I	02A060
CH_3	08C020
CH_4	01A020
CH_4O	05A020
CH_4S	13A020
CH_5N	10A020
CH_6N_2	11B020
$C_2Cl_2F_2$	02B090
C_2Cl_4	02B080
C_2HCl_3	02B070
C_2Cl_6	02A320
C_2H_2	01C020
$C_2H_2Cl_2$	02B040
$C_2H_2Cl_2$	02B060
$C_2H_2Cl_4$	02A300
C_2H_3Cl	02B020
$C_2H_3Cl_3$	02A280
$C_2H_3Cl_3$	02A290
C_2H_3N	09A020
C_2H_4	01B020
$C_2H_4O_2$	08A040
$C_2H_4Cl_2$	02A260
$C_2H_4Cl_2O$	04B020
C_2H_4O	07A040
$C_2H_4O_3$	08B020
C_2H_5Cl	02A250
C_2H_5ClO	04A020
C_2H_5N	10B020
C_2H_5NO	08C040
C_2H_6	01A040
$C_2H_6N_2O$	12A020
C_2H_6O	05A040
$C_2H_6S_2$	13B080
C_2H_6SO	14B020
$C_2H_6O_2$	06A020
C_2H_6S	13A040
C_2H_6S	13B020
C_2H_7N	10A040
C_2H_7N	10B040
C_2H_7NO	10A060
$C_2H_8N_2$	10A080
$C_2H_8N_2$	11B040
$C_2H_8N_2$	11B060
$C_3H_2Cl_4O$	07C020
C_3H_3N	09A040
C_3H_4	01C040
$C_3H_4Cl_2$	02B100
C_3H_4O	07A060
$C_3H_4O_2$	08B060
C_3H_5ClO	04A040
C_3H_5ClO	04A050
C_3H_5ClO	04A060
C_3H_5N	09A060

INDEX (Continued)

C_3H_6	01B040
$C_3H_6Cl_2$	02A340
C_3H_6O	07B020
C_3H_6O	07A080
$C_3H_6O_2$	06B020
$C_3H_6O_2$	08D020
C_3H_7N	10A110
C_3H_7ClO	04A080
C_3H_7ClO	04A100
C_3H_8	01A060
C_3H_8O	05A020
C_3H_8O	05A060
C_3H_8O	05B020
$C_3H_8O_2$	06A040
C_3H_8S	13A060
C_3H_9N	10A100
C_3H_9N	10B060
C_3H_9NO	10A120
C_4Cl_6	02B120
C_4H_4O	24A020
$C_4H_4O_4$	08A060
C_4H_4S	25A020
C_4H_5N	23C020
C_4H_6	01B080
C_4H_6	01C060
$C_4H_6O_3$	08B060
C_4H_7ClO	04A140
C_4H_7N	09A080
C_4H_8	01B060
$C_4H_8Cl_2O$	04B040
$C_4H_8Cl_2O$	04B060
$C_4H_8Cl_2O$	04B080
C_4H_8O	03A060
C_4H_8O	07A100
C_4H_8O	07B060
$C_4H_8O_2$	03B020
$C_4H_4O_2$	03B040
$C_4H_8O_2$	08B040
C_4H_9Br	02A360
C_4H_9ClO	04A120
C_4H_9NO	10B100
C_4H_{10}	01A080
$C_4H_{10}O$	05A080
$C_4H_{10}O$	05A100
$C_4H_{10}O$	05A080
$C_4H_{10}N_2O$	12A040
$C_4H_{10}O$	05C020
$C_4H_{10}O$	05B040
$C_4H_{10}S$	13A080
$C_4H_{10}S$	13B040
$C_4H_{11}N$	10A140
$C_4H_{11}N$	10B080
C_5H_4ClN	23A100
C_5H_5N	23A020
C_5Cl_6	02B140
C_5H_6	01B120
C_5H_6S	25A040
$C_5H_8O_2$	08D060
$C_5H_8O_2$	08D080
C_5H_{10}	01B100
C_5H_{10}	01A120
$C_5H_{10}O$	07A120
$C_5H_{10}O_2$	08A080
$C_5H_{10}O_2$	08D100
C_5H_{12}	01A100
$C_5H_{12}O$	05A120
$C_5H_{12}O$	05B060
$C_5H_{12}O$	05C040

INDEX (Continued)

C_6Cl_6	16A162
$C_6H_nCl_n$	16A160
C_6HCl_5O	19A060
$C_6H_3Cl_3$	16A161
$C_6H_3N_2O_7$	20A120
C_6H_4BrCl	16A080
$C_6H_4Br_2$	16A060
$C_6H_4ClNO_2$	17B040
$C_6H_4ClNO_2$	17B060
$C_6H_4Cl_2$	16A100
$C_6H_4Cl_2$	16A120
$C_6H_4Cl_2$	16A140
$C_6H_4Cl_2O$	19A040
$C_6H_4N_2O_5$	20A100
C_6H_5Br	16A040
C_6H_5Cl	16A020
C_6H_5ClO	19A020
$C_6H_5NO_2$	17A020
$C_6H_5NO_3$	20A020
$C_6H_5NO_3$	20A040
$C_6H_5NO_3$	20A060
$C_6H_5N_3O_5$	20A080
C_6H_6	15A020
$C_6H_6Cl_6$	02A380
C_6H_6O	18A020
$C_6H_6O_2$	18B020
$C_6H_6O_2$	18B040
$C_6H_6O_2$	18B060
$C_6H_6O_3$	18B080
$C_6H_6SO_3$	14A020
C_6H_6	13A100
C_6H_7N	10C020
C_6H_7N	23A040
C_6H_8	01B180
$C_6H_8N_2$	10C100
$C_6H_8N_2O$	09A100
C_6H_8S	25A060
C_6H_{10}	01B160
$C_6H_{10}O_2$	08A101
$C_6H_{10}O_4$	08A180
$C_6H_{11}NO$	08C060
C_6H_{12}	01A160
C_6H_{12}	01B140
$C_6H_{12}O_2$	03B060
$C_6H_{12}O_2$	08D120
$C_6H_{12}Cl_2O$	04B100
$C_6H_{13}ClO$	04A160
$C_6H_{13}N$	10A160
$C_6H_{13}NO_2$	08B100
C_6H_{14}	01A140
$C_6H_{14}N_2O$	12A060
$C_6H_{14}N_2O$	12A080
$C_6H_{14}O$	03A020
$C_6H_{15}O_4P$	26A020
C_7H_5N	09B020
C_7H_5NS	23D020
$C_7H_6N_2O_4$	17A080
$C_7H_6N_2O_5$	20B020
$C_7H_6N_2O_5$	20B040
C_7H_6O	07A140
$C_7H_6O_2$	08A160
$C_7H_6O_3$	08B040
C_7H_7Cl	16A180
C_7H_7Cl	16B020
C_7H_7ClO	19B020
$C_7H_7NO_2$	17A040

INDEX (Continued)

$C_7H_7NO_3$	17B020
C_7C_8	15A040
$C_7H_8N_2O$	12B020
C_7H_8O	05A140
C_7H_8O	18A040
$C_7H_8O_2$	18A060
C_7H_9N	10C040
C_7H_9N	23A141
C_7H_9N	23A142
C_7H_9N	23A143
C_7H_9N	23A144
C_7H_9N	23A145
C_7H_9N	23A061
C_7H_9N	23A062
C_7H_9N	23A063
C_7H_9NO	10C080
$C_7H_{10}S$	25A081
C_7H_{14}	01B200
$C_7H_{14}O_2$	08D140
C_7H_{16}	01A180
C_8H_6O	24A040
$C_8H_6O_4$	08A200
C_8H_6S	25B040
$C_8H_6S_2$	25B020
C_8H_7N	23C040
C_8H_7NS	23D040
$C_8H_8Cl_2$	16B040
$C_8H_8O_2$	07B120
$C_8H_8O_2$	08D160
C_8H_{10}	15B080
C_8H_{10}	15A060
$C_8H_{10}N$	05A160
$C_8H_{10}O$	05B100
$C_8H_{10}O$	18A080
$C_8H_{10}N$	18A140
$C_8H_{11}N$	10C060
$C_8H_{11}N$	10D020
$C_8H_{11}N$	23A120
$C_8H_{11}N$	23A064
C_8H_{12}	15A080
$C_8H_{12}N_2$	09A120
$C_8H_{16}Cl_2O$	04B120
$C_8H_{16}O_2$	08A102
$C_8H_{17}Cl$	02A400
C_8H_{18}	01A200
C_9H_7N	23B020
C_9H_8	22A010
C_9H_8O	24A060
C_9H_9N	23C060
C_9H_{10}	15B020
$C_9H_{10}O$	18C080
C_9H_{12}	15B180
C_8H_{12}	15A100
C_9H_{12}	15A120
C_9H_{12}	15B180
$C_9H_{12}O$	18A160
$C_9H_{12}O$	18A181
$C_9H_{13}N$	23A146
$C_9H_{14}O$	07B080
C_9H_{20}	01A220
$C_9H_{20}O$	05B080
$C_{10}H_7Cl$	16A200
$C_{10}H_8$	21A020
$C_{10}H_8O$	18C020
$C_{10}H_8O$	18C040
$C_{10}H_9N$	10C200
$C_{10}H_9N$	10C220
$C_{10}H_9N$	23B040

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$C_{10}H_{10}$ 15B140
$C_{10}H_{10}O_4$ 08D281
$C_{10}H_{12}$ 01B220
$C_{10}H_{12}$ 15B120
$C_{10}H_{14}$ 15A140
$C_{10}H_{14}$ 15B101
$C_{10}H_{14}$ 15B102
$C_{10}H_{14}$ 15B103
$C_{10}H_{14}$ 15B200
$C_{10}H_{14}O$ 07B181
$C_{10}H_{16}O$ 07B100
$C_{10}H_{16}O$ 07B182
$C_{10}H_{18}O$ 05B120
$C_{10}H_{18}O$ 05B140
$C_{10}H_{18}O$ 05C060
$C_{10}H_{18}O_4$ 08D200
$C_{10}H_{20}O_2$ 08A103
$C_{10}H_{22}$ 01A240
$C_{10}H_{22}N_2O$ 12A100
$C_{11}H_7N$ 09B040
$C_{11}H_7O_2$ 18C140
$C_{11}H_9N$ 23A080
$C_{11}H_{10}$ 21A040
$C_{11}H_{10}$ 21A042
$C_{11}H_{11}N$ 23B060
$C_{11}H_{24}$ 01A242
$C_{12}Cl_n$ 16A220
$C_{12}H_8$ 21A100
$C_{12}H_8O$ 24B020
$C_{12}H_8O$ 24B040
$C_{12}H_8S$ 25B060
$C_{12}H_9BrO$ 04A200
$C_{12}H_9ClO$ 04A180
$C_{12}H_9N$ 23C080
$C_{12}H_9NO_2$ 17A060
$C_{12}H_{10}$ 15A160
$C_{12}H_{10}$ 21A100
$C_{12}H_{10}ClN$ 10C160
$C_{12}H_{10}N_2O$ 12B040
$C_{12}H_{10}O$ 18A100
$C_{12}H_{10}O$ 18C100
$C_{12}H_{10}O_2$ 18A120
$C_{12}H_{10}S$ 13B060
$C_{12}H_{11}N$ 10C120
$C_{12}H_{12}$ 21A043
$C_{12}H_{12}$ 21A044
$C_{12}H_{12}$ 21A080
$C_{12}H_{12}N_2$ 10C140
$C_{12}H_{12}N_2$ 11B080
$C_{12}H_{14}O_4$ 08D282
$C_{12}H_{18}$ 15B104
$C_{12}H_{18}$ 15B105
$C_{12}H_{26}$ 01A260
$C_{13}H_9ClO_2$ 07C040
$C_{13}H_9N$ 23B080
$C_{13}H_9N$ 23B120
$C_{13}H_9N$ 23B140
$C_{13}H_9N$ 23B160
$C_{13}H_{10}$ 22A020
$C_{13}H_{10}O$ 18C120
$C_{13}H_{10}O_2$ 08D180
$C_{13}H_{11}N$ 23B100
$C_{13}N_{11}N$ 23C100
$C_{13}H_{12}$ 22A040
$C_{13}H_{12}Cl_2N_2$ 10C180
$C_{13}H_{12}O$ 03A040
$C_{14}H_8C_8S_2$ 14A040
$C_{14}H_{10}$ 21A140

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$C_{14}H_{10}$	21A180
$C_{14}H_{10}O$	18C060
$C_{14}H_{10}S$	13A120
$C_{14}H_{15}N_3$	11A040
$C_{14}H_{22}$	15B106
$C_{14}H_{22}O$	18A182
$C_{14}H_{26}O_4$	08D220
$C_{14}H_{28}O_2$	08A121
$C_{15}H_9N$	23B300
$C_{15}H_{10}$	22B080
$C_{15}H_{12}$	21A201
$C_{15}H_{24}O$	18A183
$C_{16}H_{10}$	22B040
$C_{16}H_{10}$	21B180
$C_{16}H_{10}O$	24B060
$C_{16}H_{10}O$	24B080
$C_{16}H_{10}O$	24B100
$C_{16}H_{10}S$	25B080
$C_{16}H_{11}N$	23C120
$C_{16}H_{11}N$	23B280
$C_{16}H_{12}$	21A060
$C_{16}H_{14}$	21A160
$C_{16}H_{22}O_4$	08D283
$C_{16}H_{32}O_2$	08A122
$C_{17}H_{11}N$	23B180
$C_{17}H_{11}N$	23B200
$C_{17}H_{12}$	21B200
$C_{17}H_{12}$	22B020
$C_{17}H_{12}$	22B060
$C_{17}H_{12}O$	07B160
$C_{18}H_{12}$	21B040
$C_{18}H_{12}$	21B101
$C_{18}H_{12}$	21B120
$C_{18}H_{14}$	15B160
$C_{18}H_{14}$	21B220
$C_{18}H_{15}O_4P$	26B020
$C_{18}H_{34}O_2$	08A140
$C_{18}H_{34}O_4$	08D240
$C_{18}H_{36}O_2$	08A123
$C_{19}H_{14}$	21B102
$C_{19}H_{14}$	21B103
$C_{19}H_{14}$	21B104
$C_{19}H_{14}$	21B105
$C_{19}H_{14}$	21B106
$C_{19}H_{14}$	21B107
$C_{19}H_{14}$	21B140
$C_{19}H_{20}O_4$	08D320
$C_{20}H_{12}$	22C020
$C_{20}H_{12}$	22C040
$C_{20}H_{12}$	22C080
$C_{20}H_{12}$	21C100
$C_{20}H_{12}$	21C120
$C_{20}H_{12}$	21C140
$C_{20}H_{13}N$	23C140
$C_{20}H_{13}N$	23C160
$C_{20}H_{13}N$	23C180
$C_{20}H_{16}$	21B060
$C_{20}H_{17}$	21B108
$C_{20}H_{17}$	21B109
$C_{21}H_{13}N$	23B220
$C_{21}H_{13}N$	23B240
$C_{21}H_{13}N$	23B260
$C_{21}H_{14}$	22C060
$C_{21}H_{16}$	21B080
$C_{21}H_{18}$	21B10A
$C_{21}H_{18}$	21B10B
$C_{21}H_{21}O_4P$	26B040
$C_{22}H_{12}$	21D080

INDEX (Continued)

$C_{22}H_{12}$	22D020
$C_{22}H_{14}$	21C020
$C_{22}H_{14}$	21C040
$C_{22}H_{14}$	21C060
$C_{22}H_{14}$	21C080
$C_{22}H_{14}$	21C160
$C_{22}H_{42}O_2$	08D260
$C_{24}H_{12}$	21D100
$C_{24}H_{14}$	21D020
$C_{24}H_{14}$	21D040
$C_{24}H_{14}$	21D060
$C_{24}H_{20}$	15B060
$C_{24}H_{38}O_4$	08D300
$C_{27}H_{18}$	22D040

APPENDIX G

GRAPHICAL SUMMARIES OF MEGs FOR ORGANICS

This appendix presents graphical summaries of the EPCs and MATEs for all organic chemicals addressed in MEGs Volumes III and IV. The graphs show for each subcategory the ranges in the MEG values based on health and based on ecology. Relative toxicities of the various categories and subcategories are readily apparent from the graphs.

Point values for specific chemicals are indicated. Individual chemical ID numbers are also shown. Both health and ecology based values are given.

Goals that are based on potential carcinogenicity are flagged so that subcategories with a number of chemicals classified as suspected carcinogens are evident.

Separate graphs are given for air and water.

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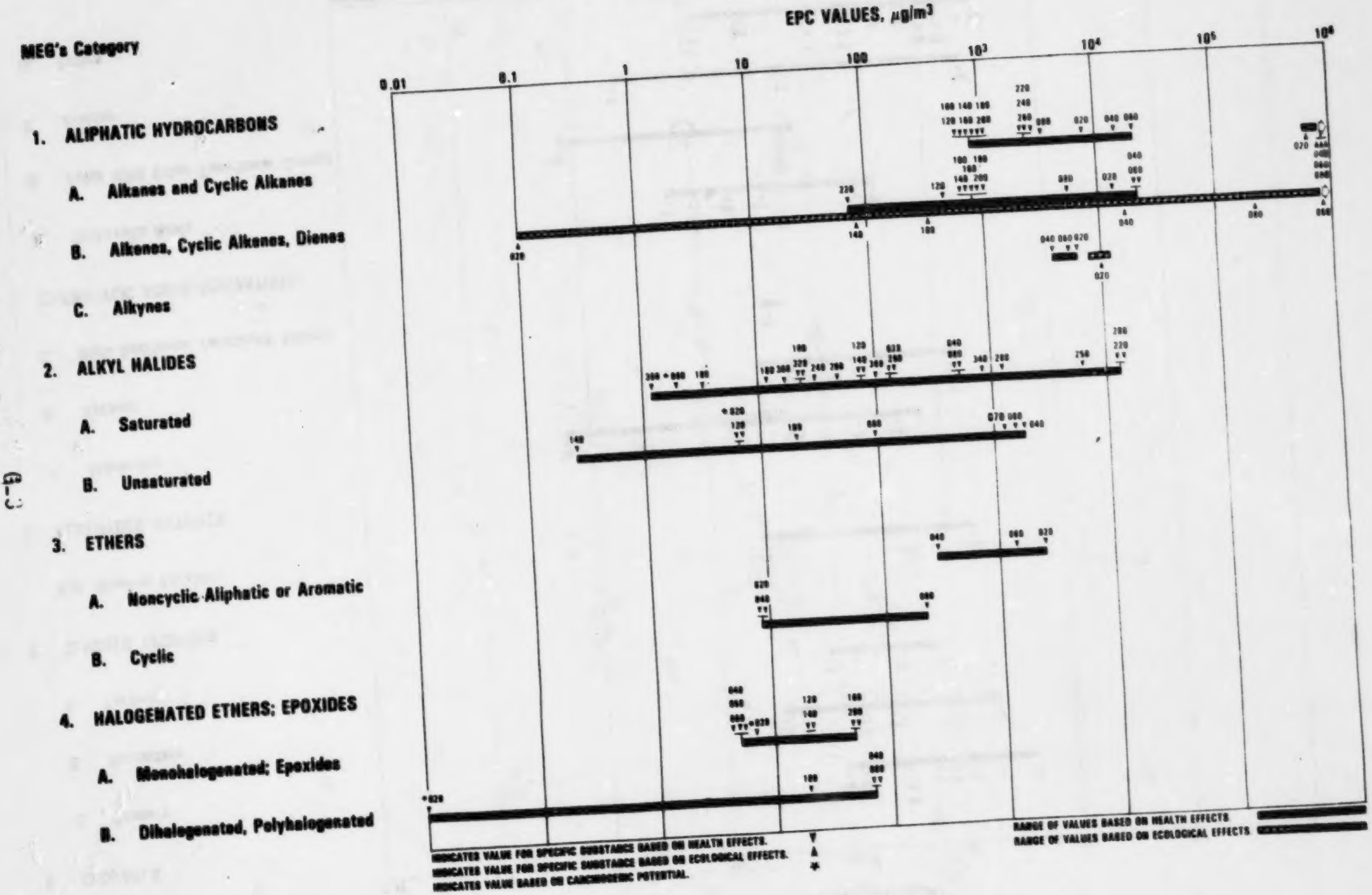
SUMMARY OF AIR EPC VALUES



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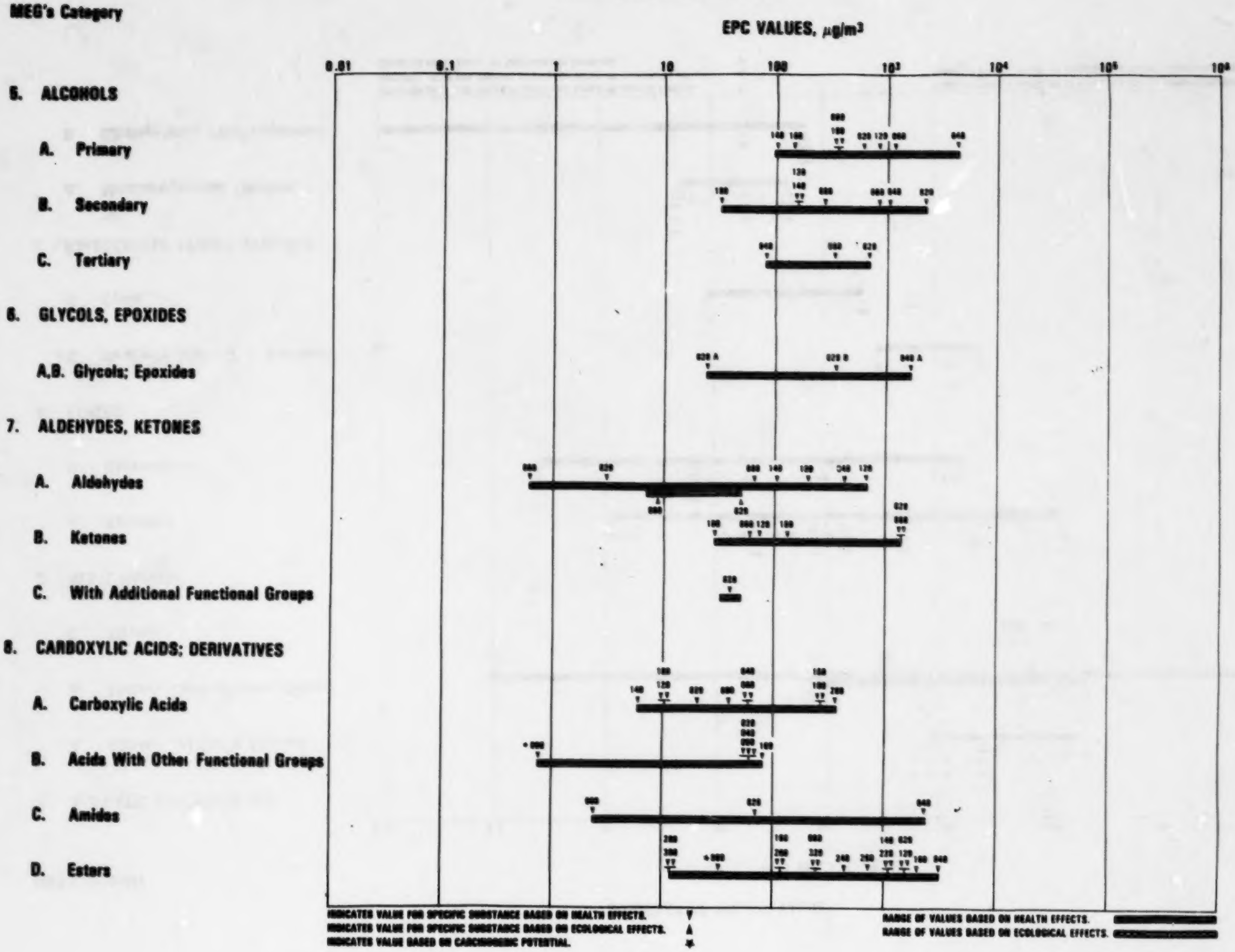

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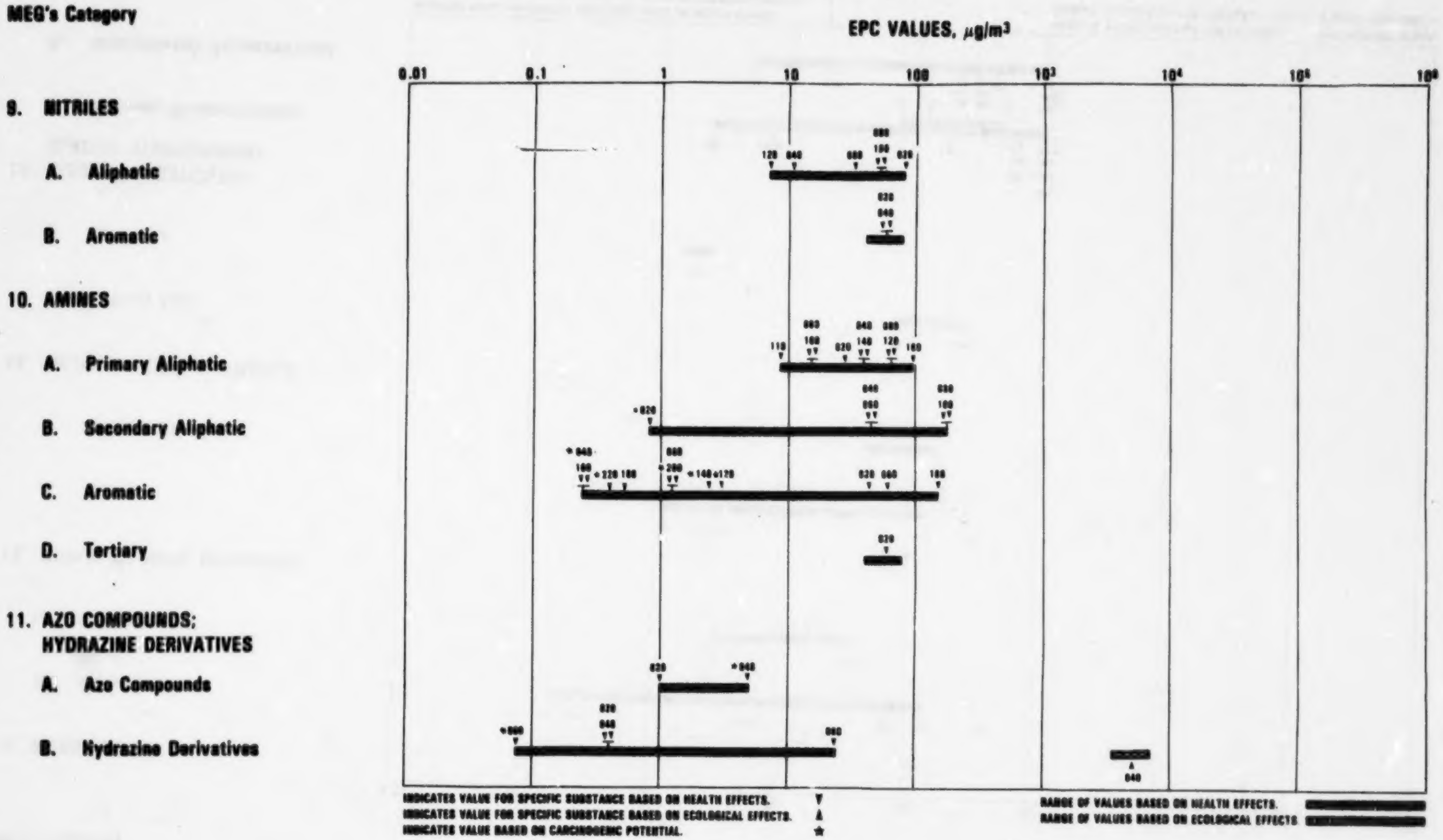

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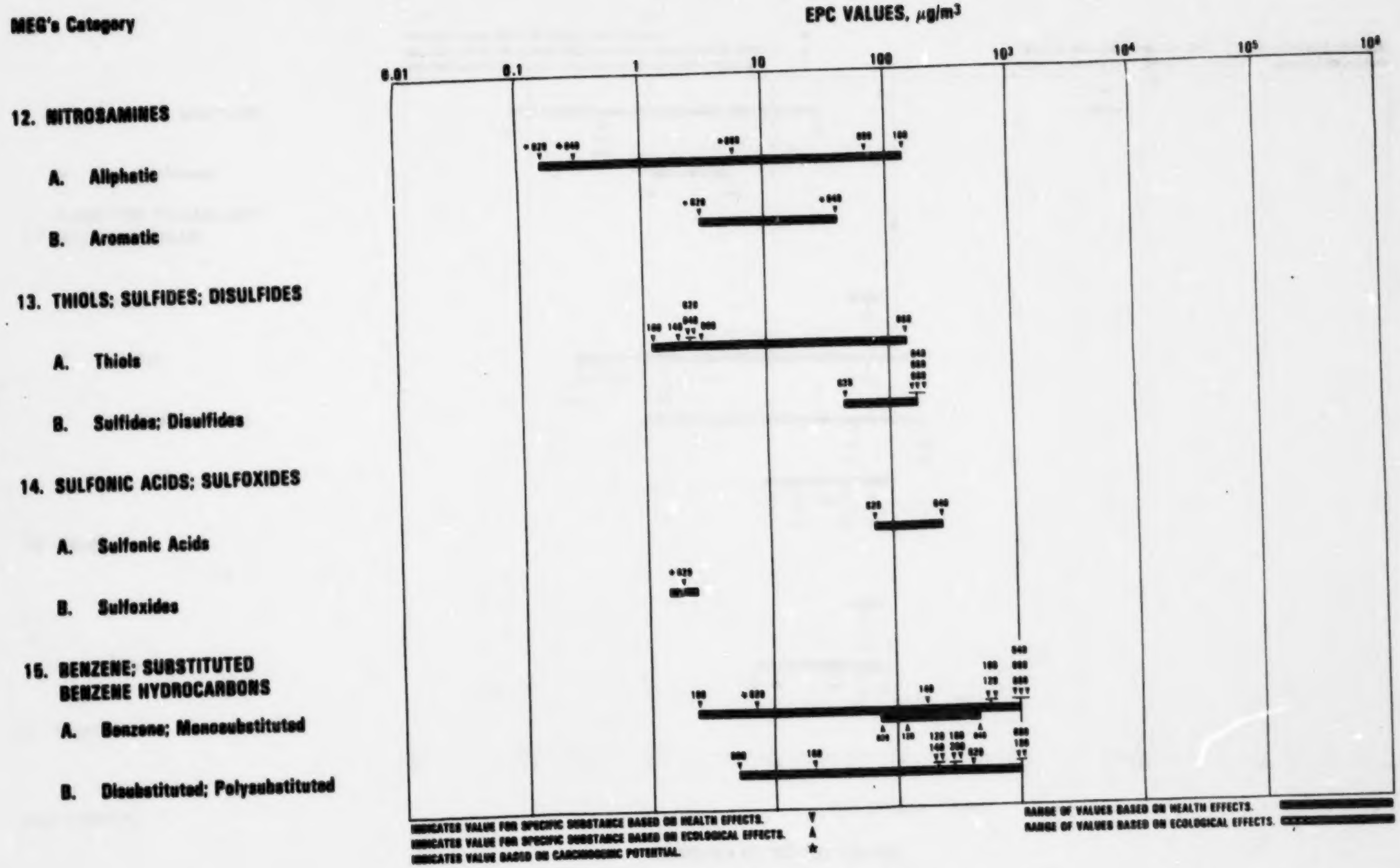

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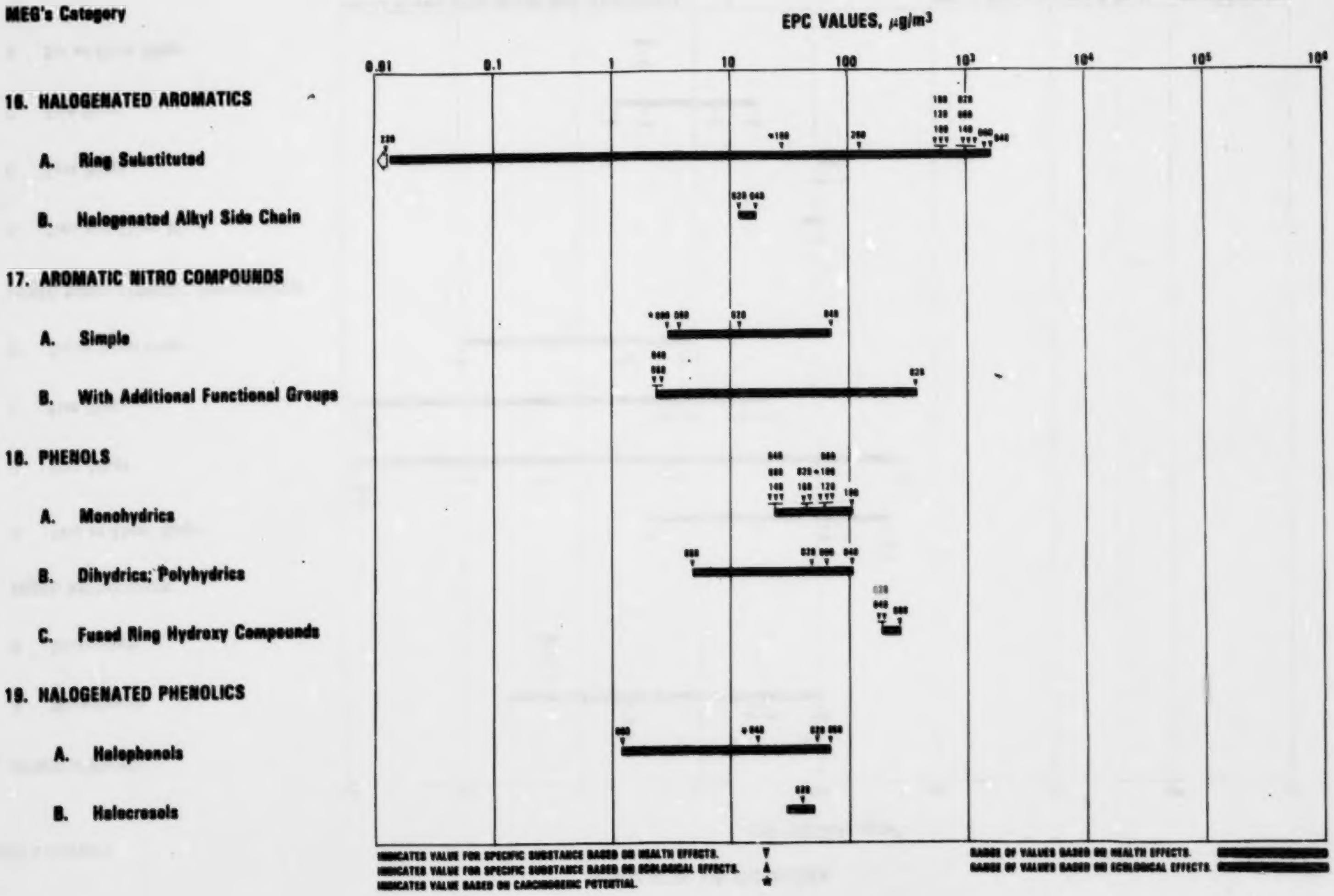

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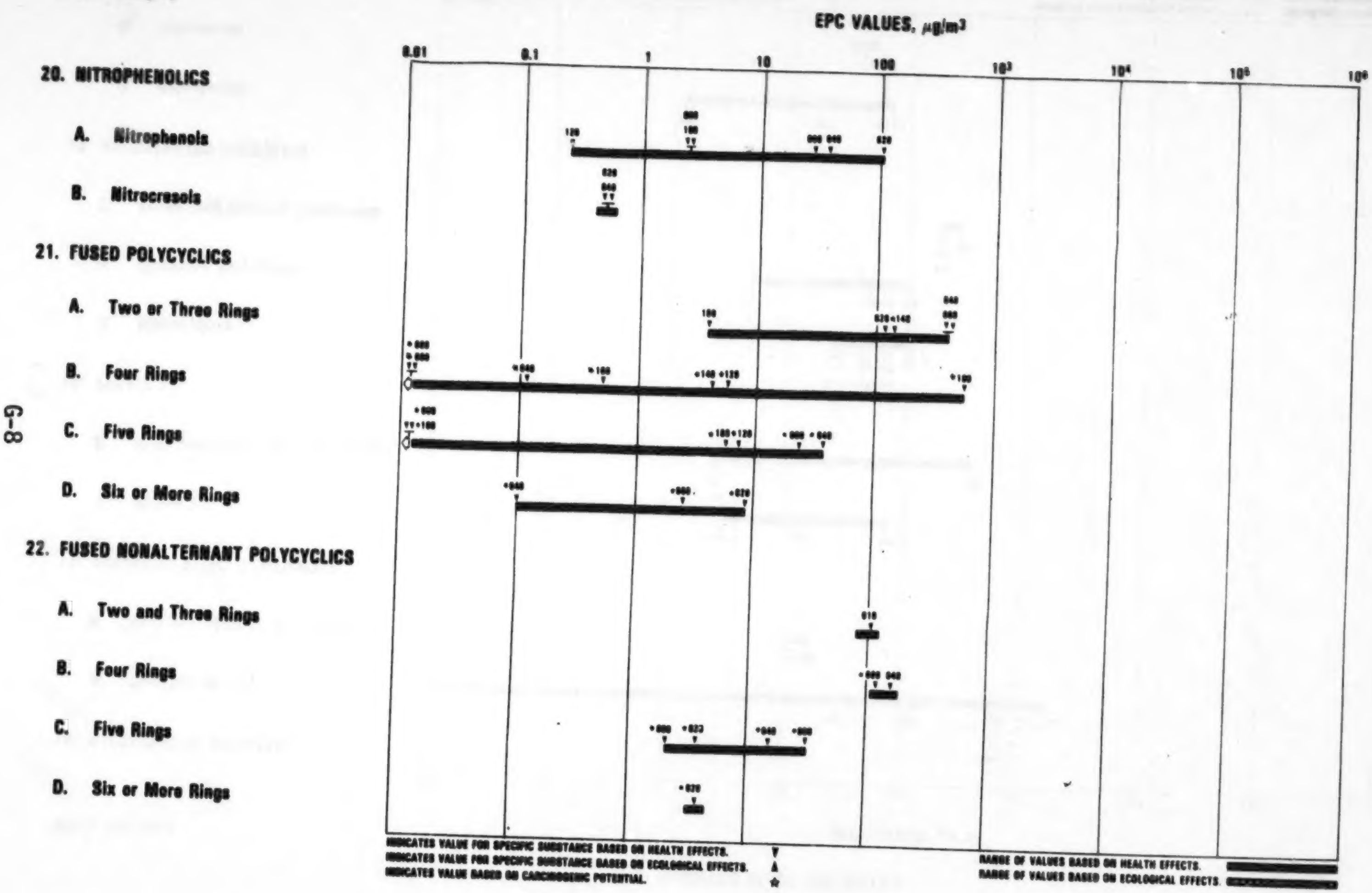

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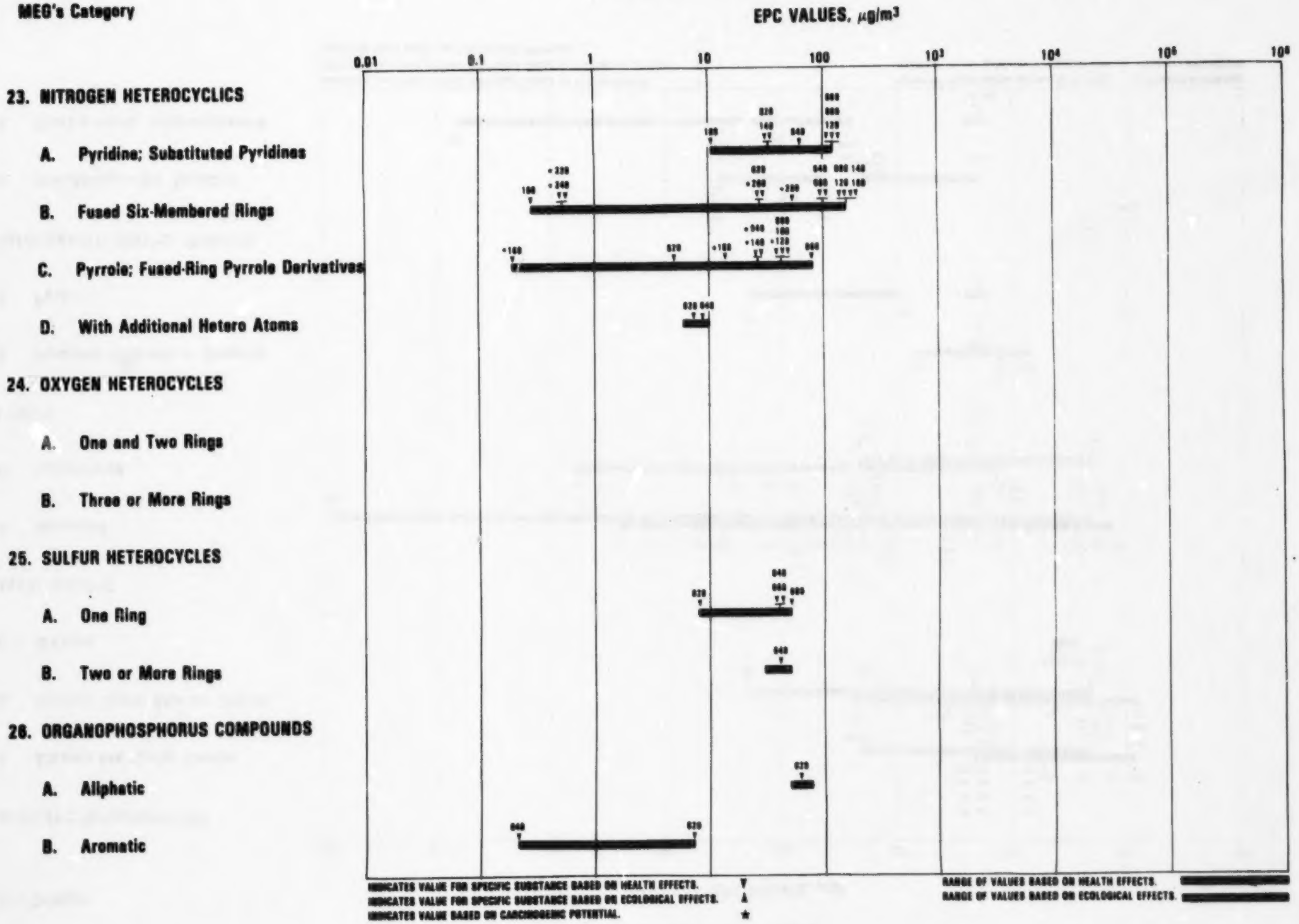

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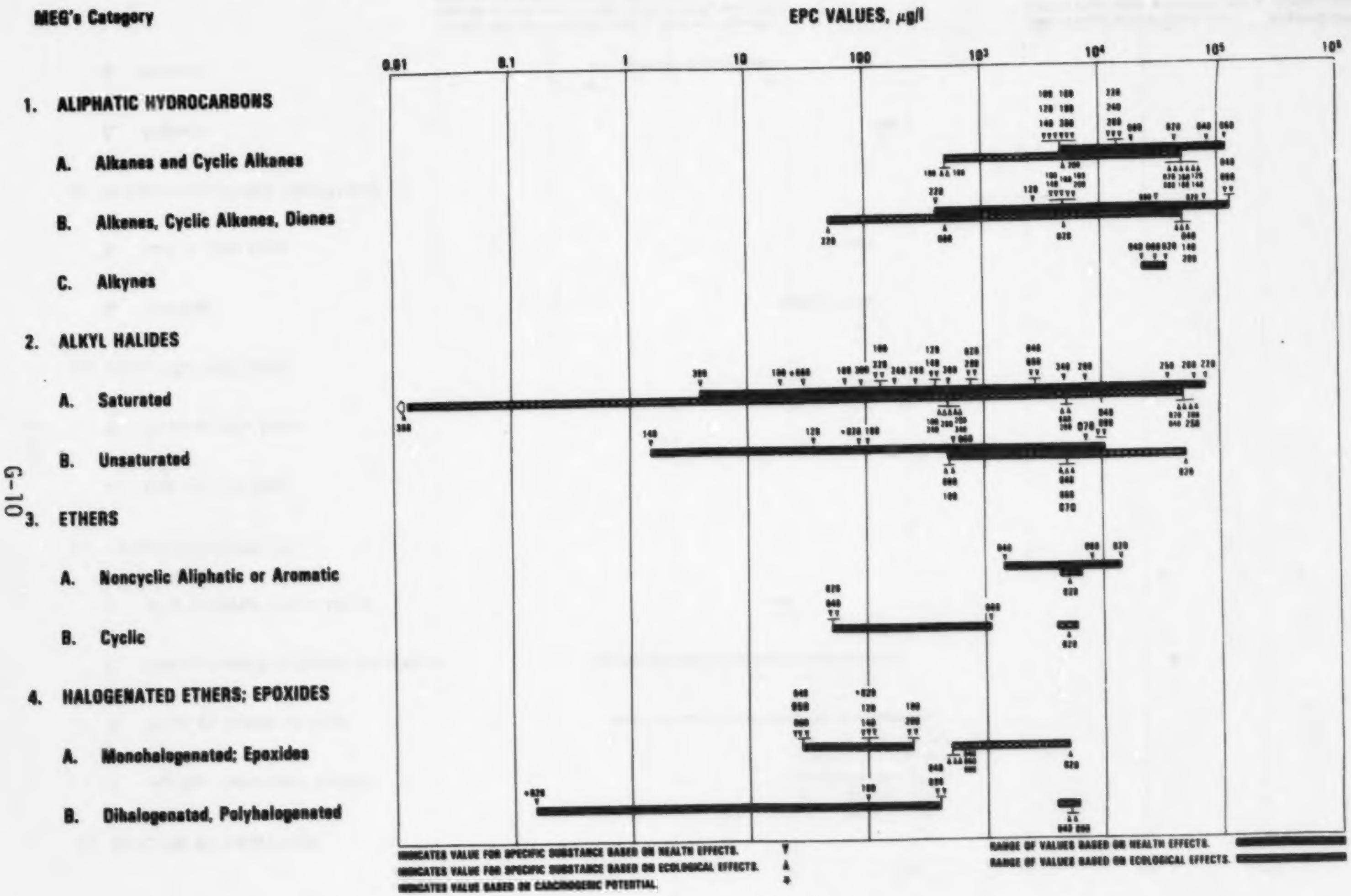

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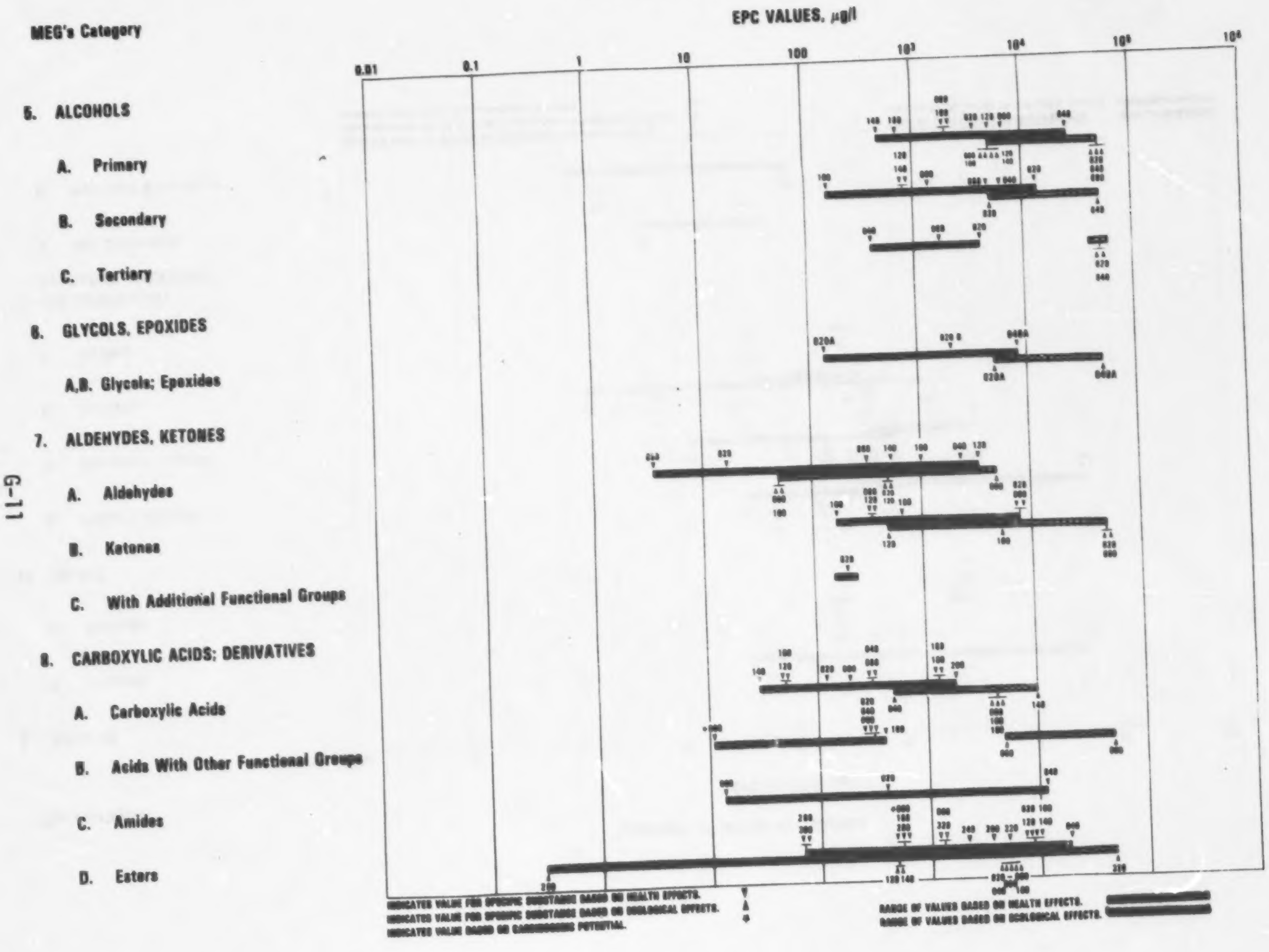

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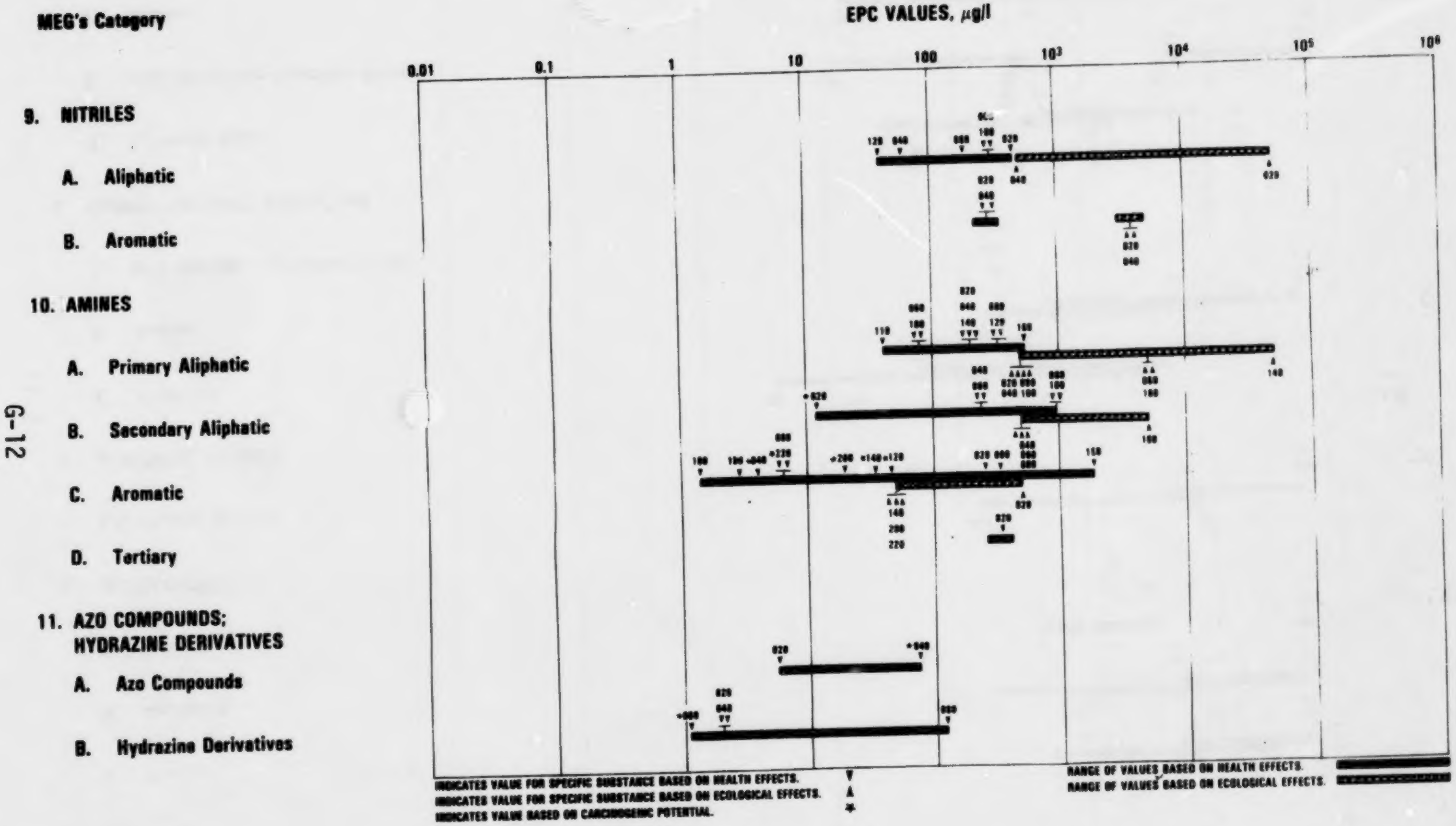

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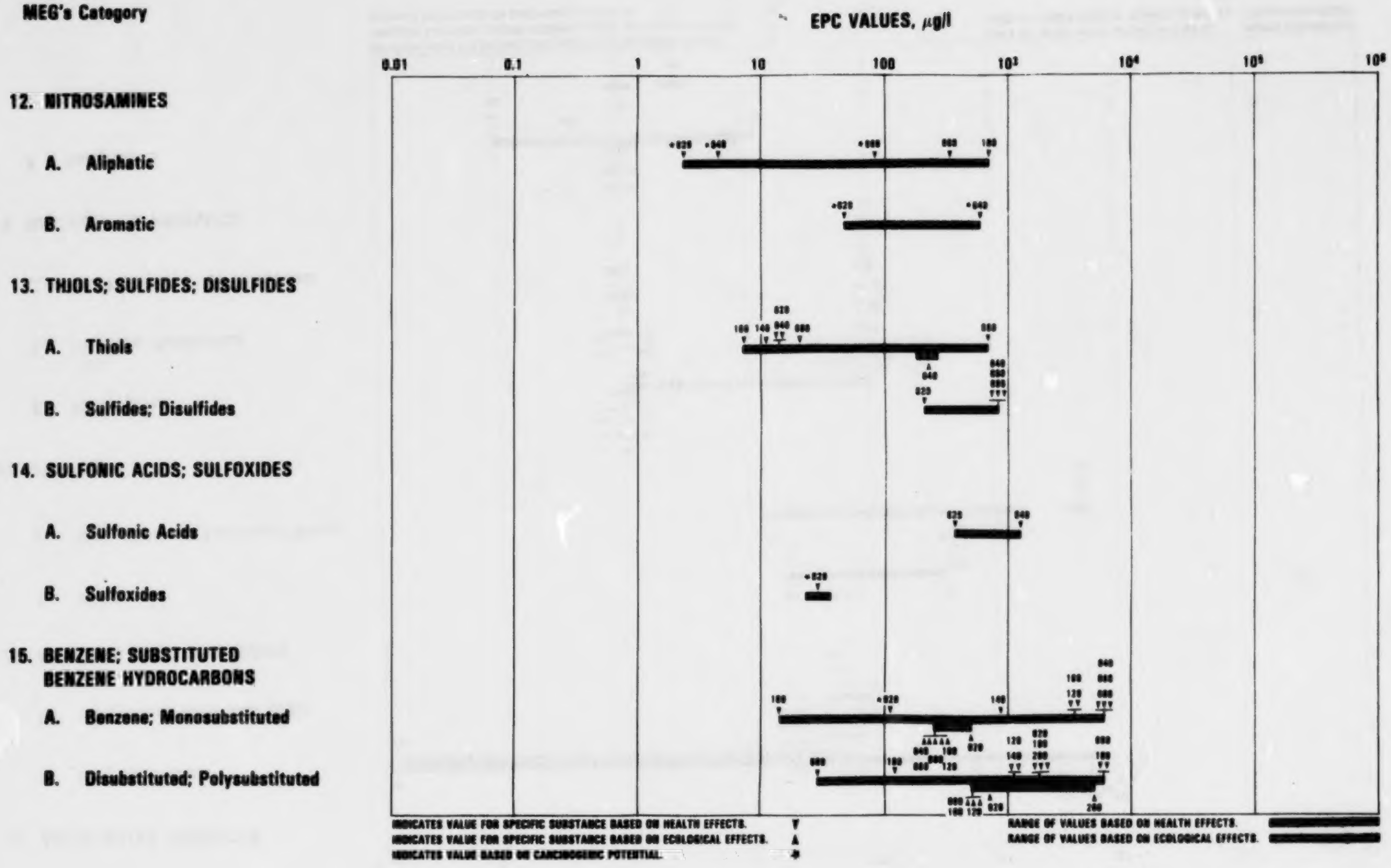

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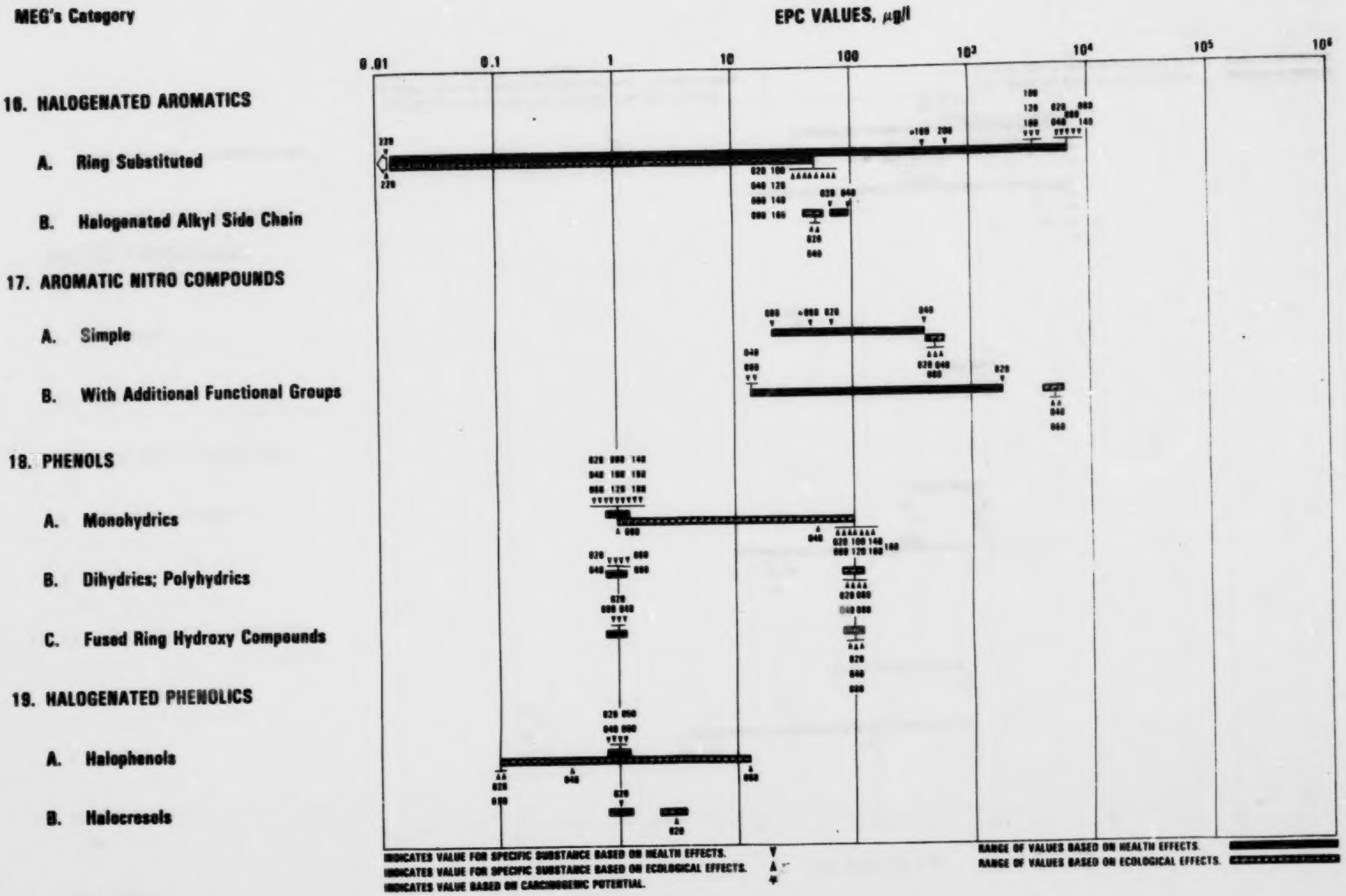

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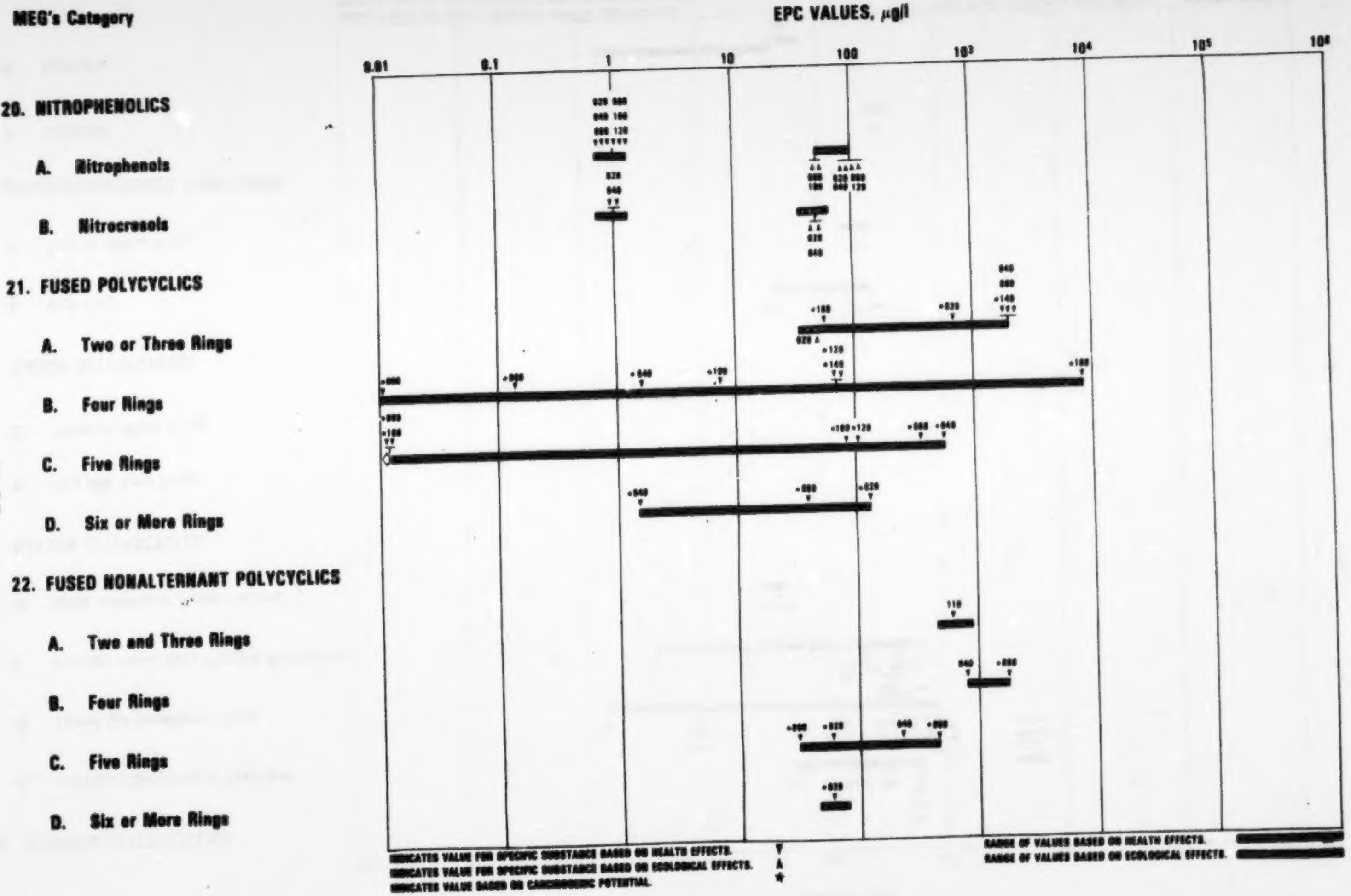

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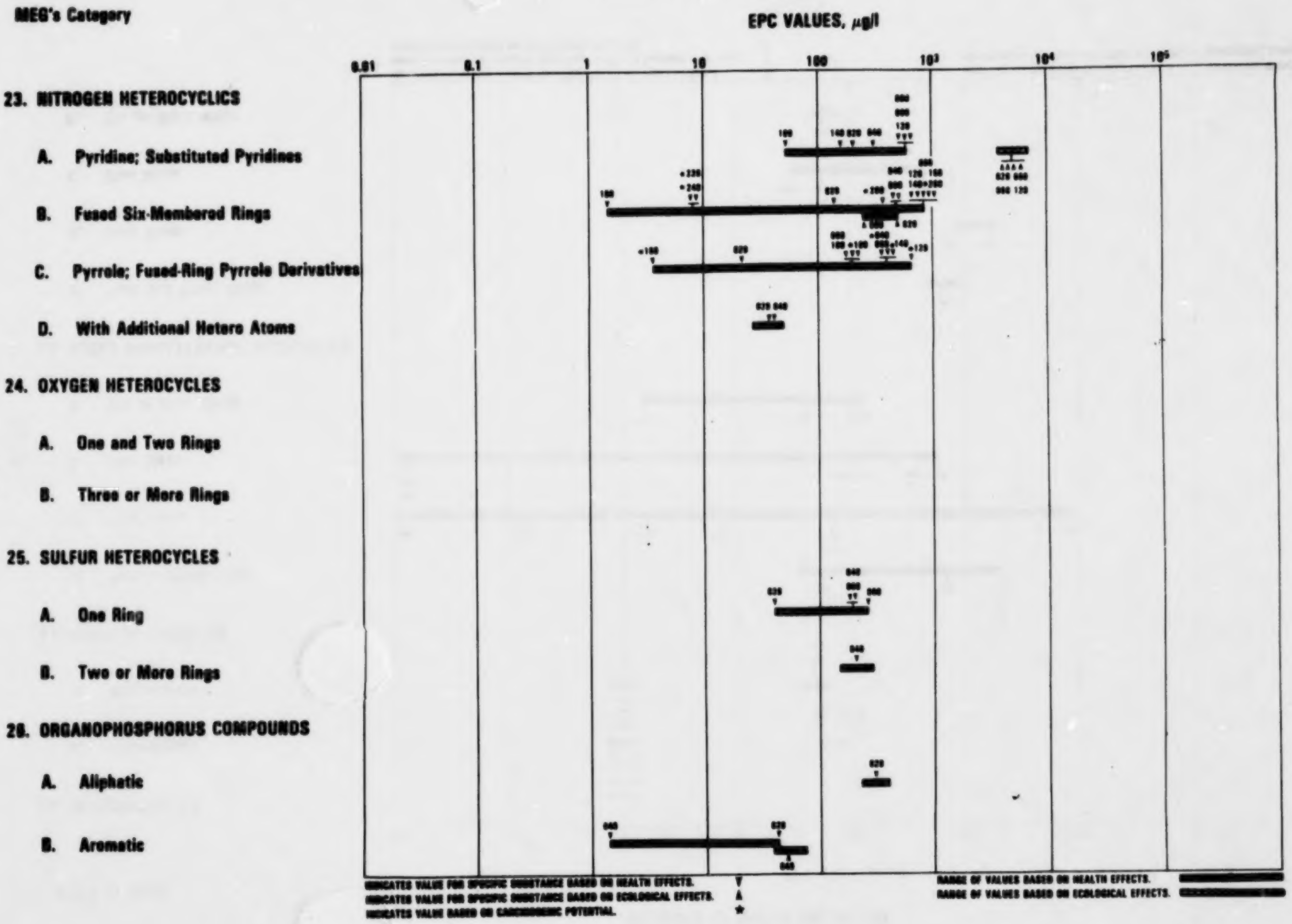

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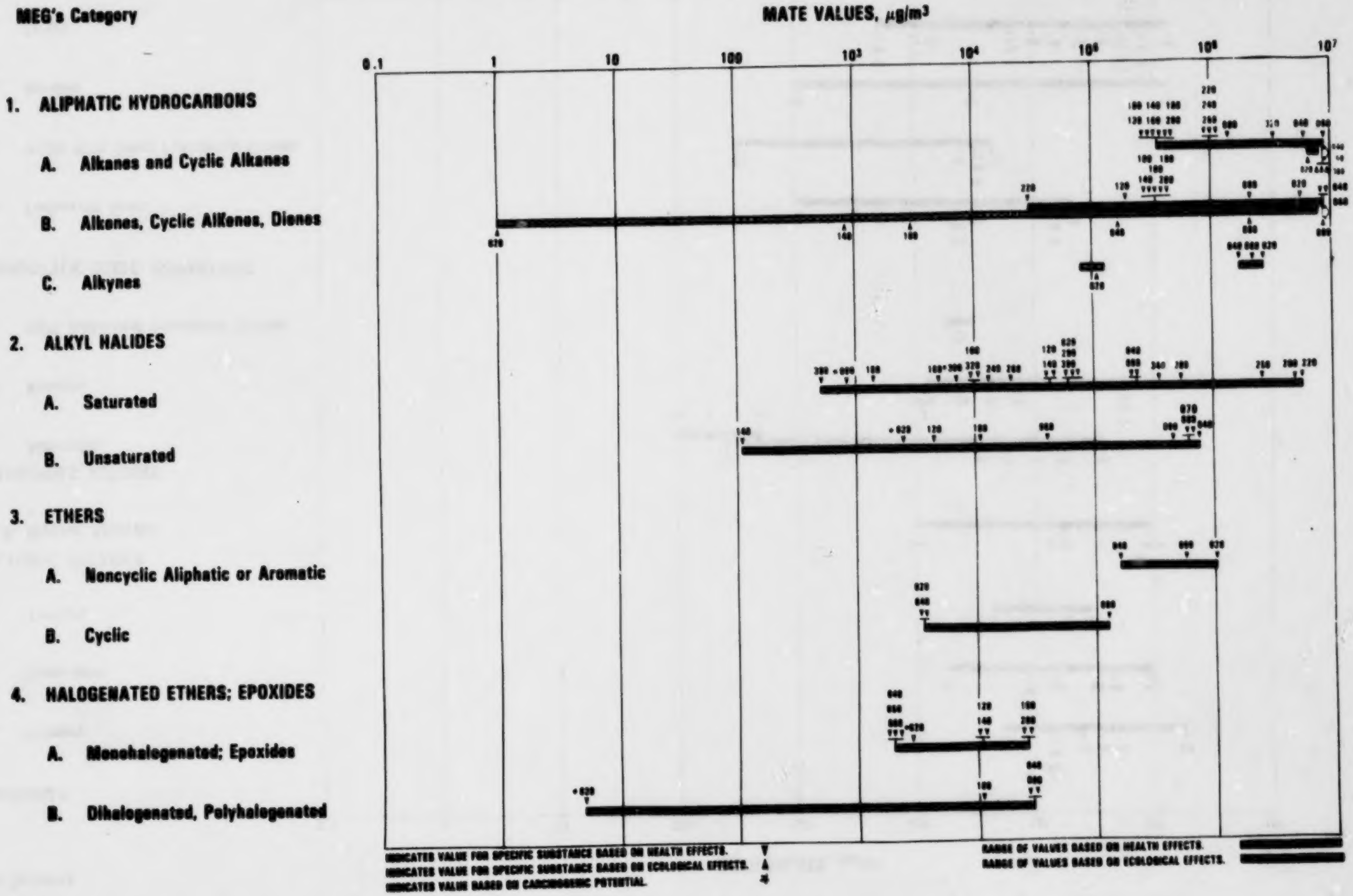

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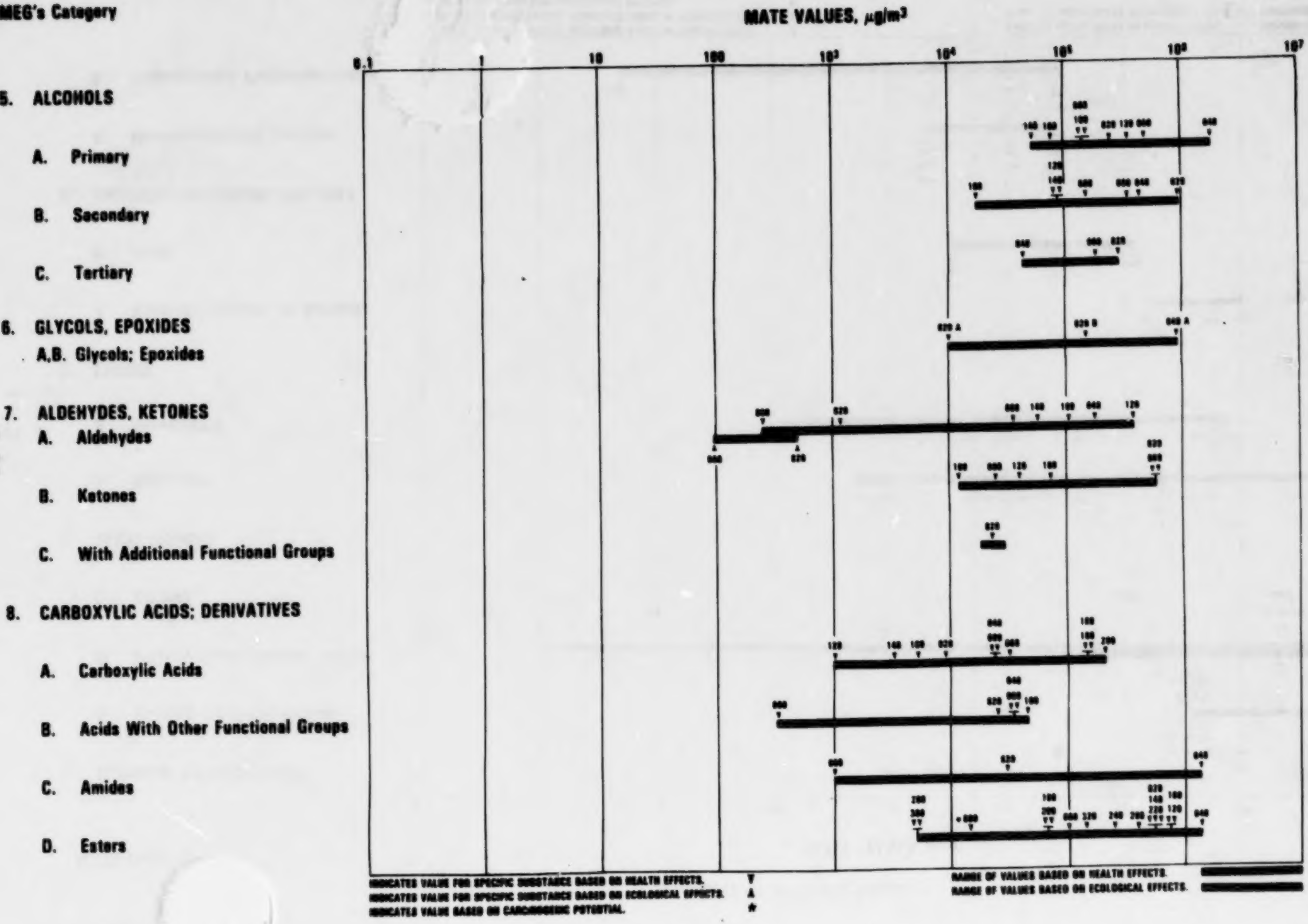

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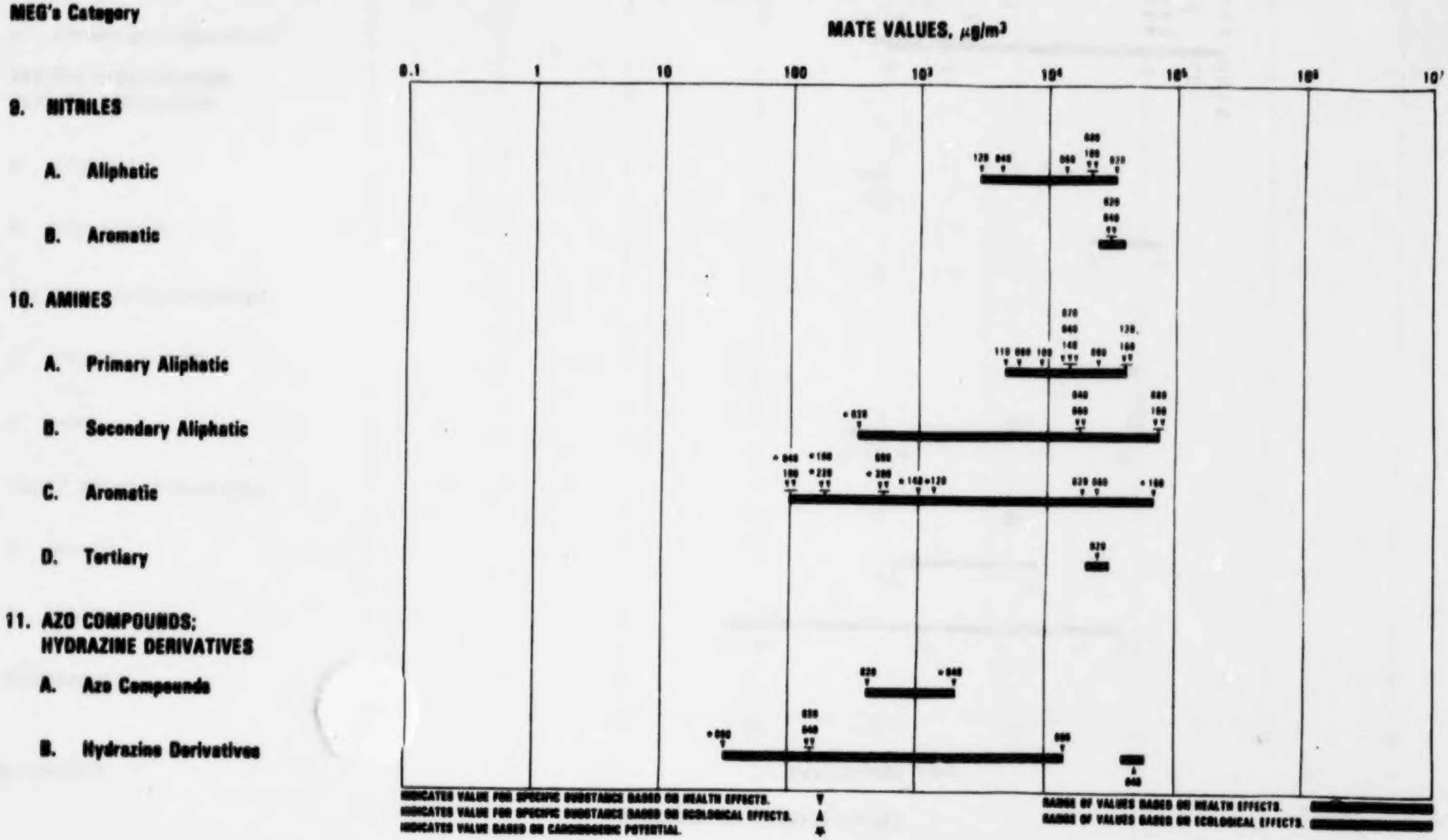

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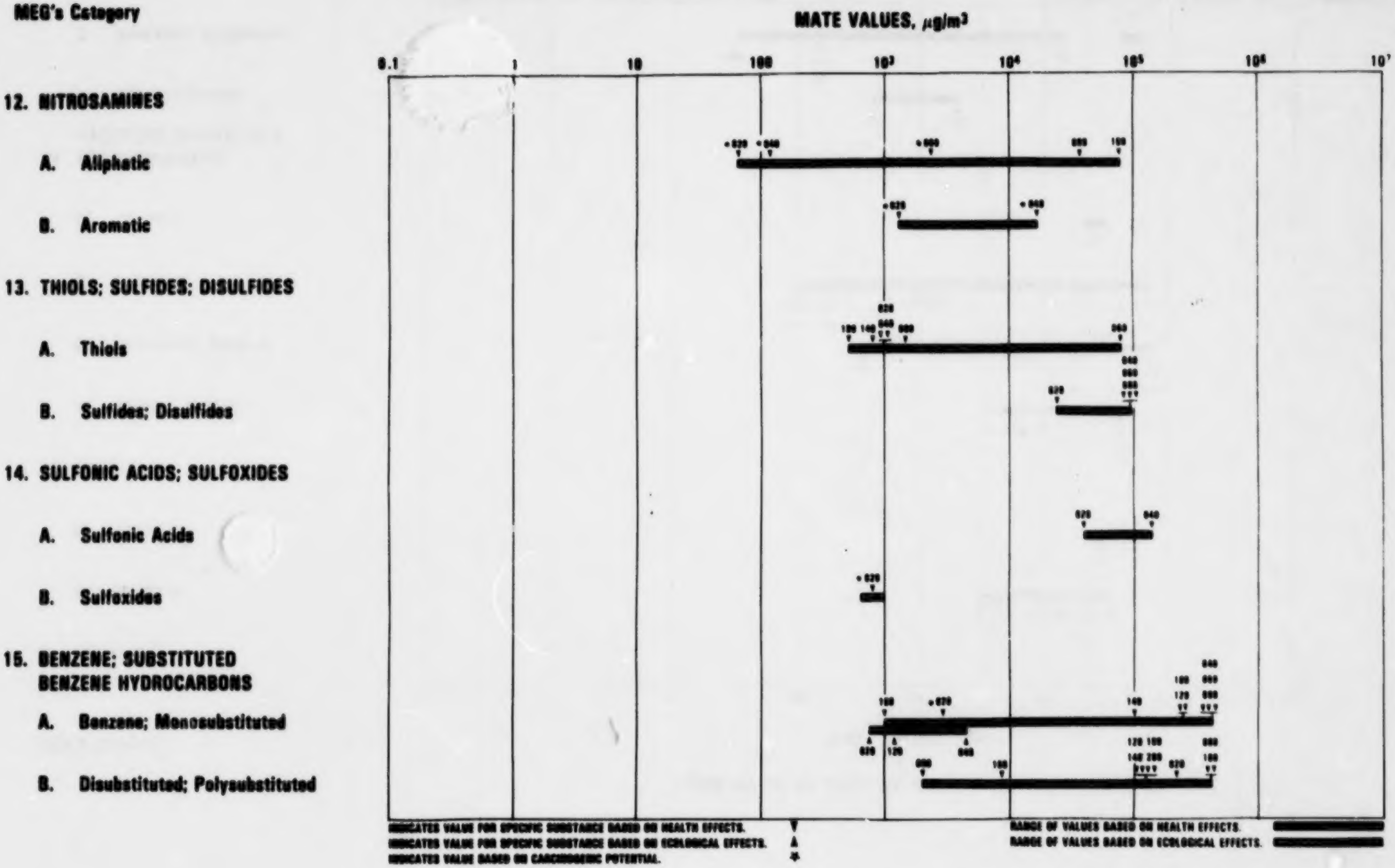

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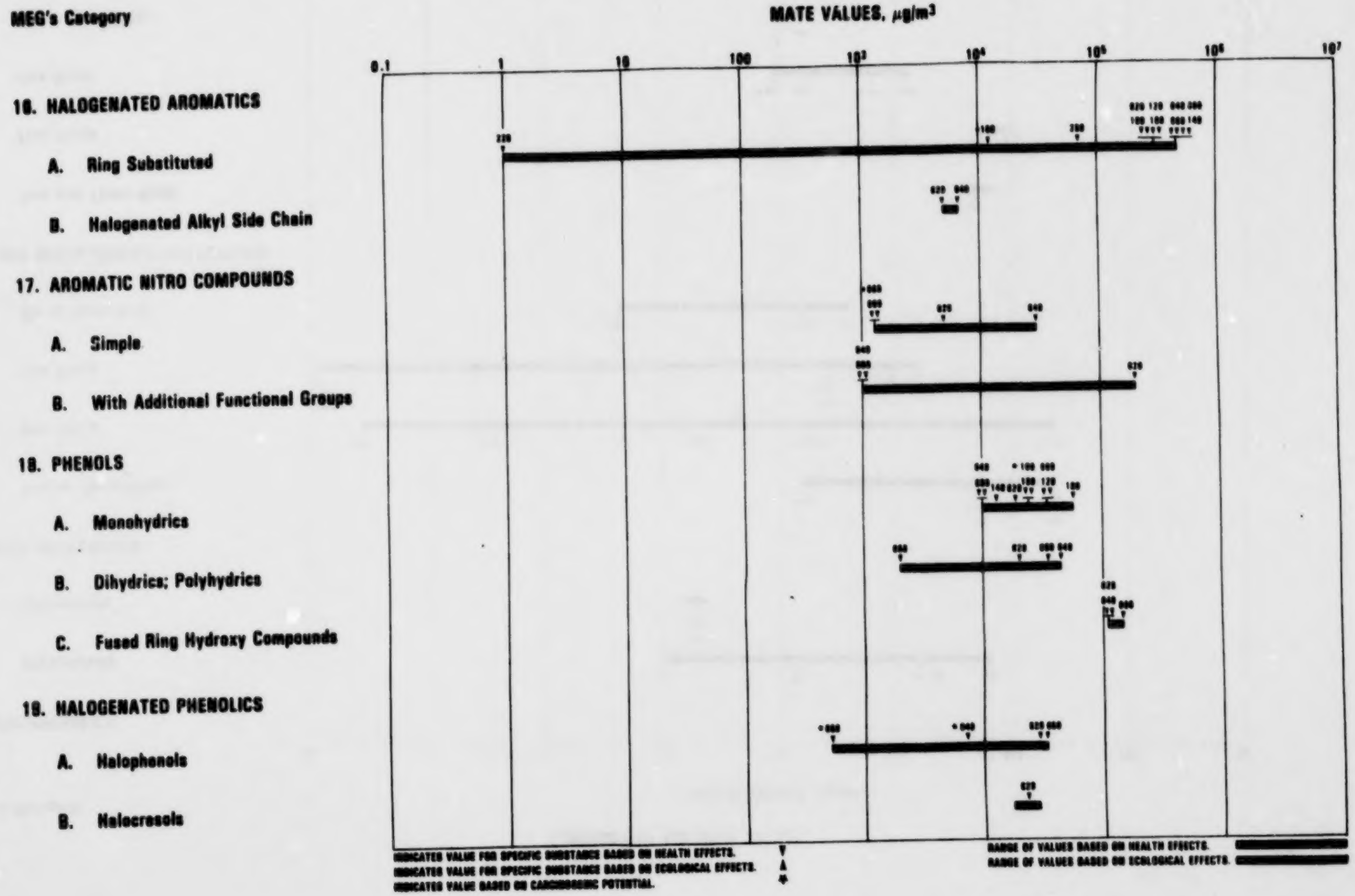

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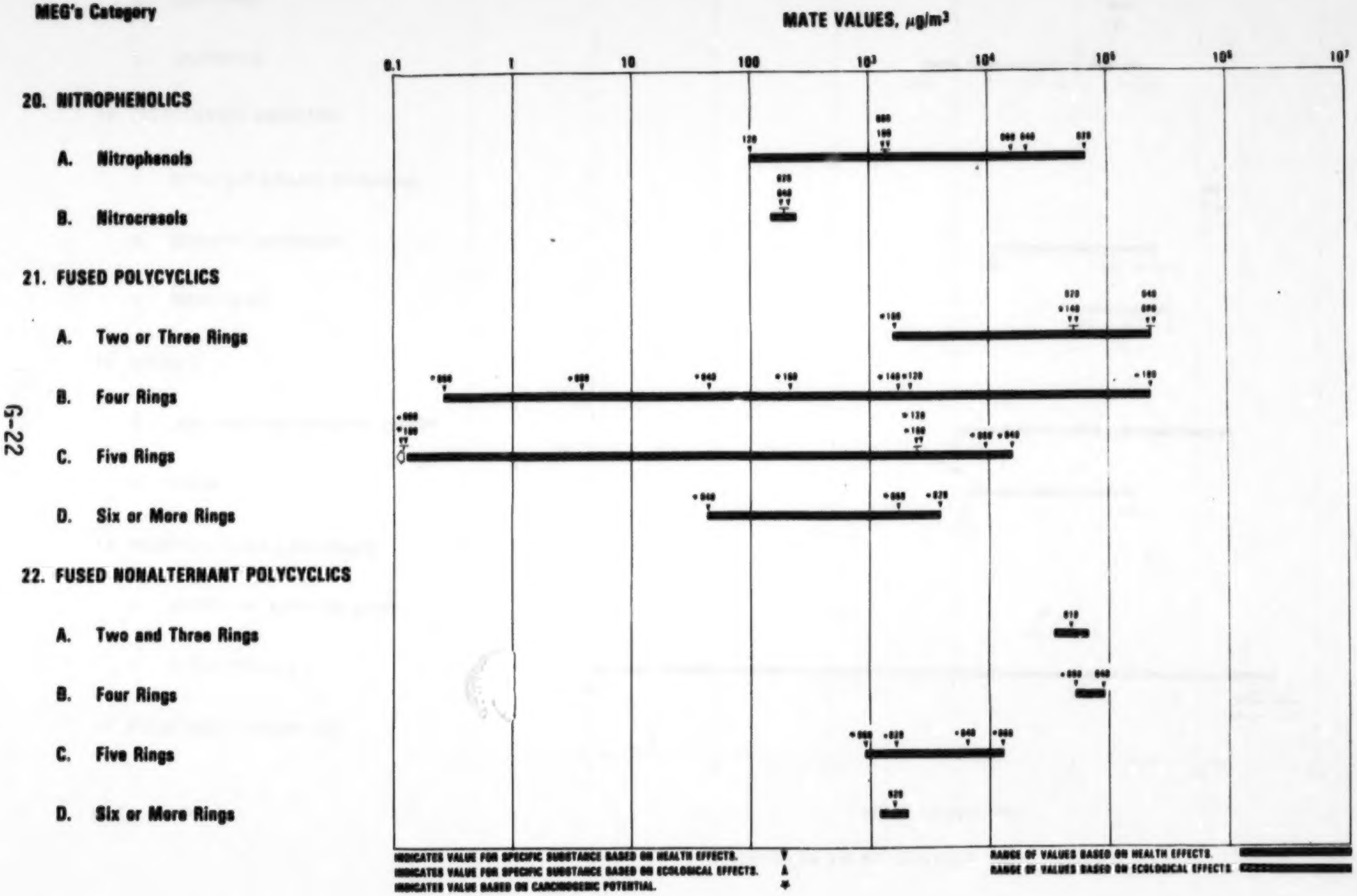

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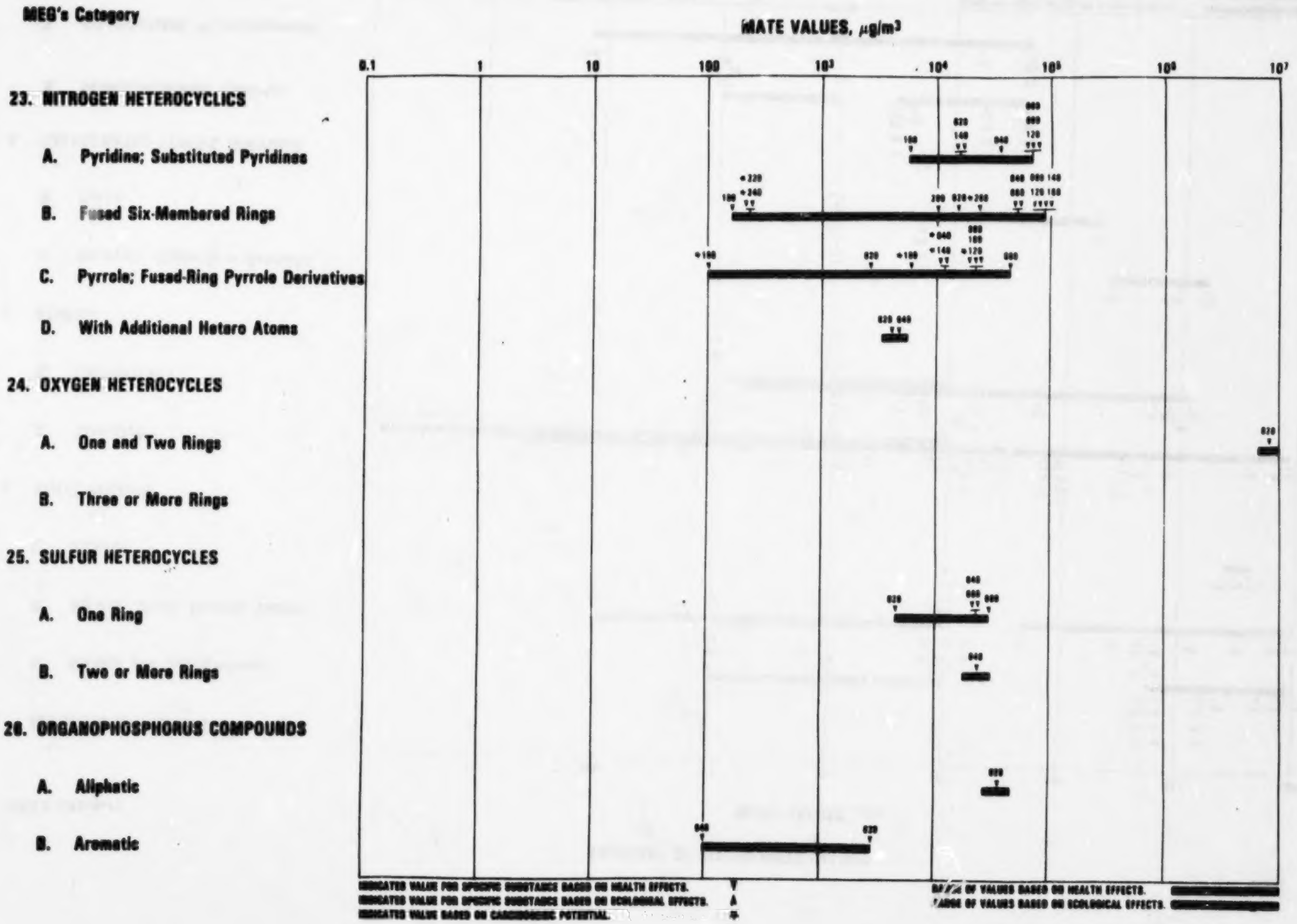

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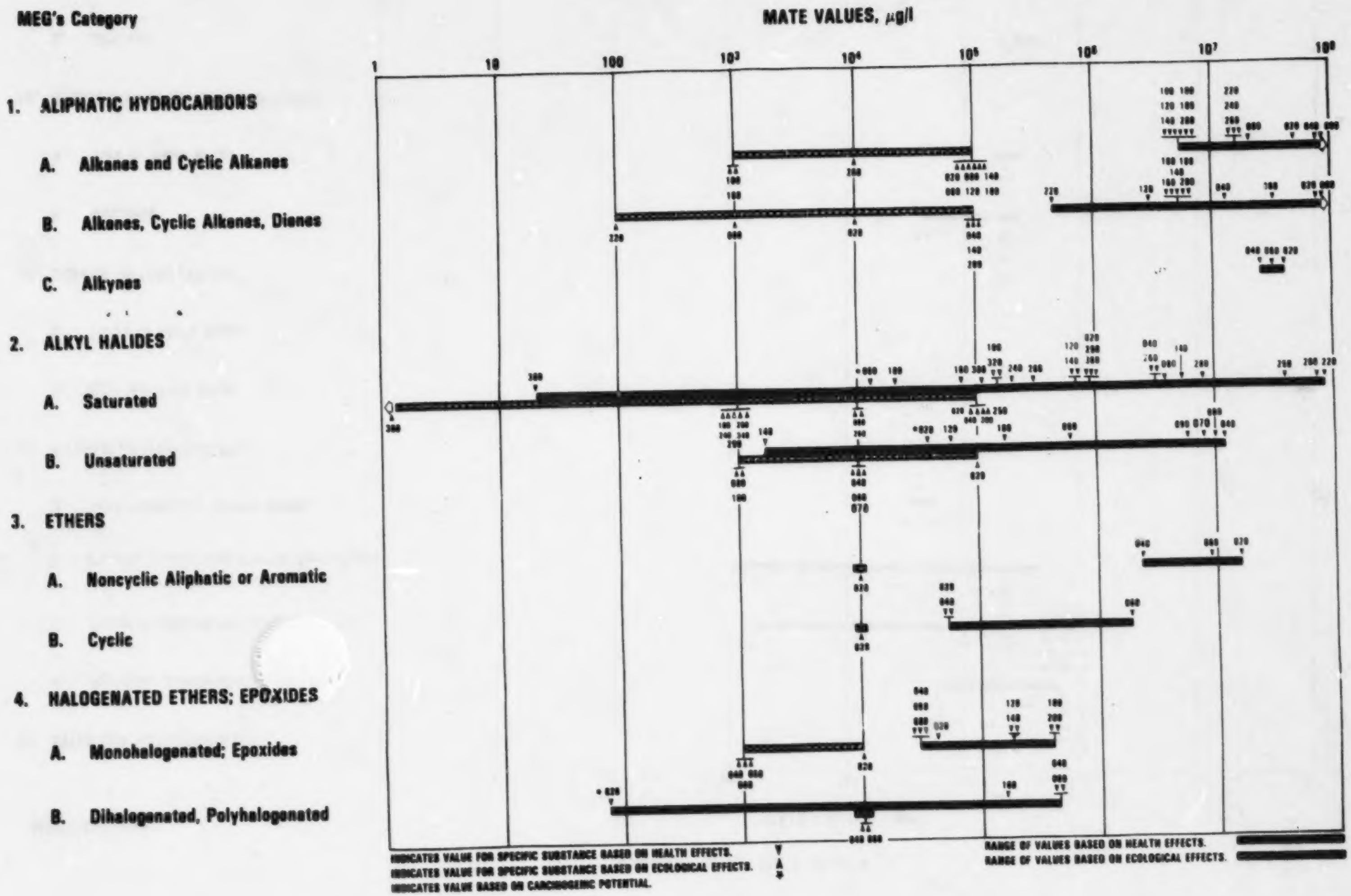

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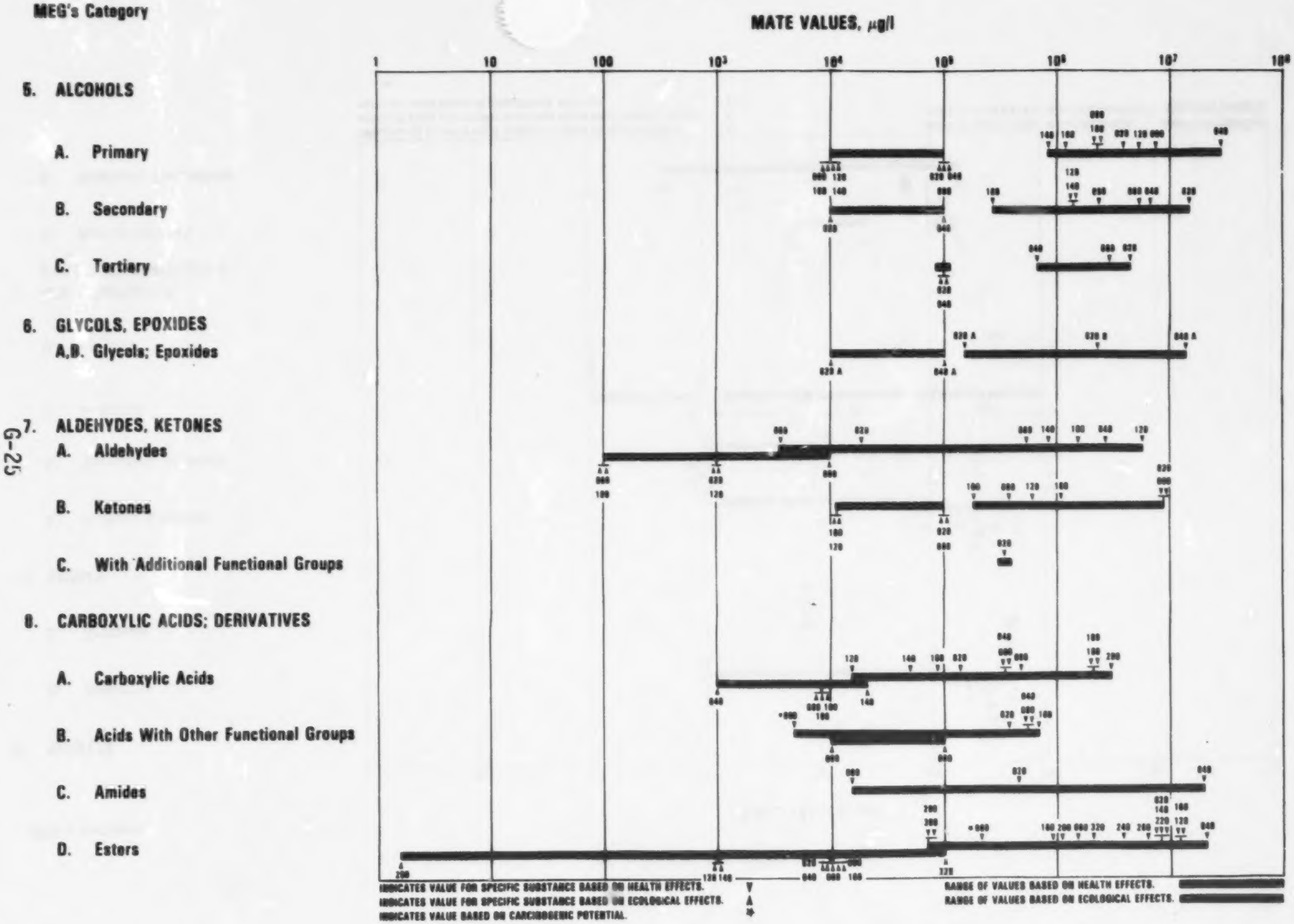
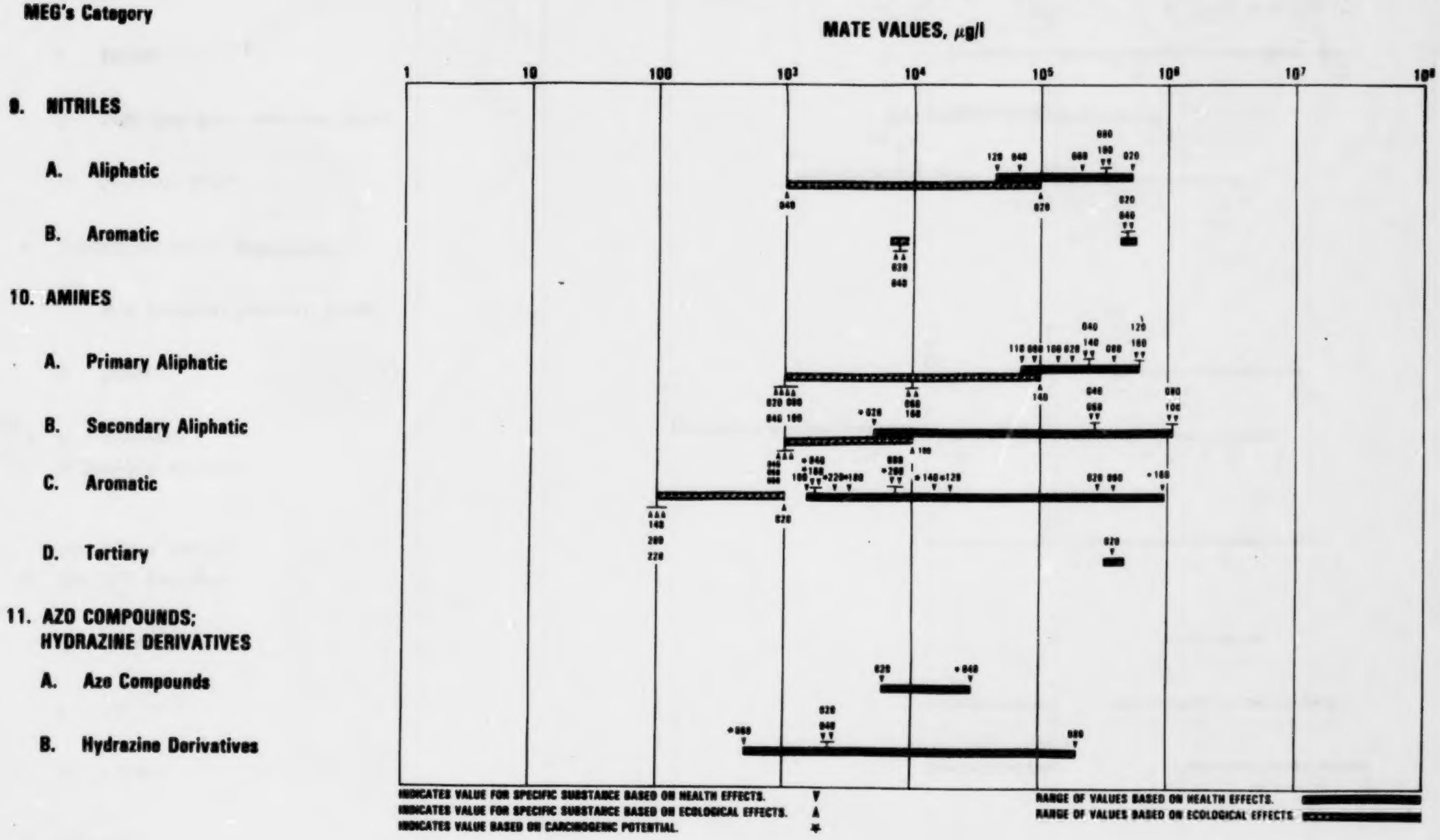


INDICATES VALUE FOR SPECIFIC SUBSTANCE BASED ON HEALTH EFFECTS. ▼
INDICATES VALUE FOR SPECIFIC SUBSTANCE BASED ON ECOLOGICAL EFFECTS. ▲
INDICATES VALUE BASED ON CARCINOGENIC POTENTIAL. ★

RANGE OF VALUES BASED ON HEALTH EFFECTS.
RANGE OF VALUES BASED ON ECOLOGICAL EFFECTS.

SUMMARY OF WATER MATE VALUES



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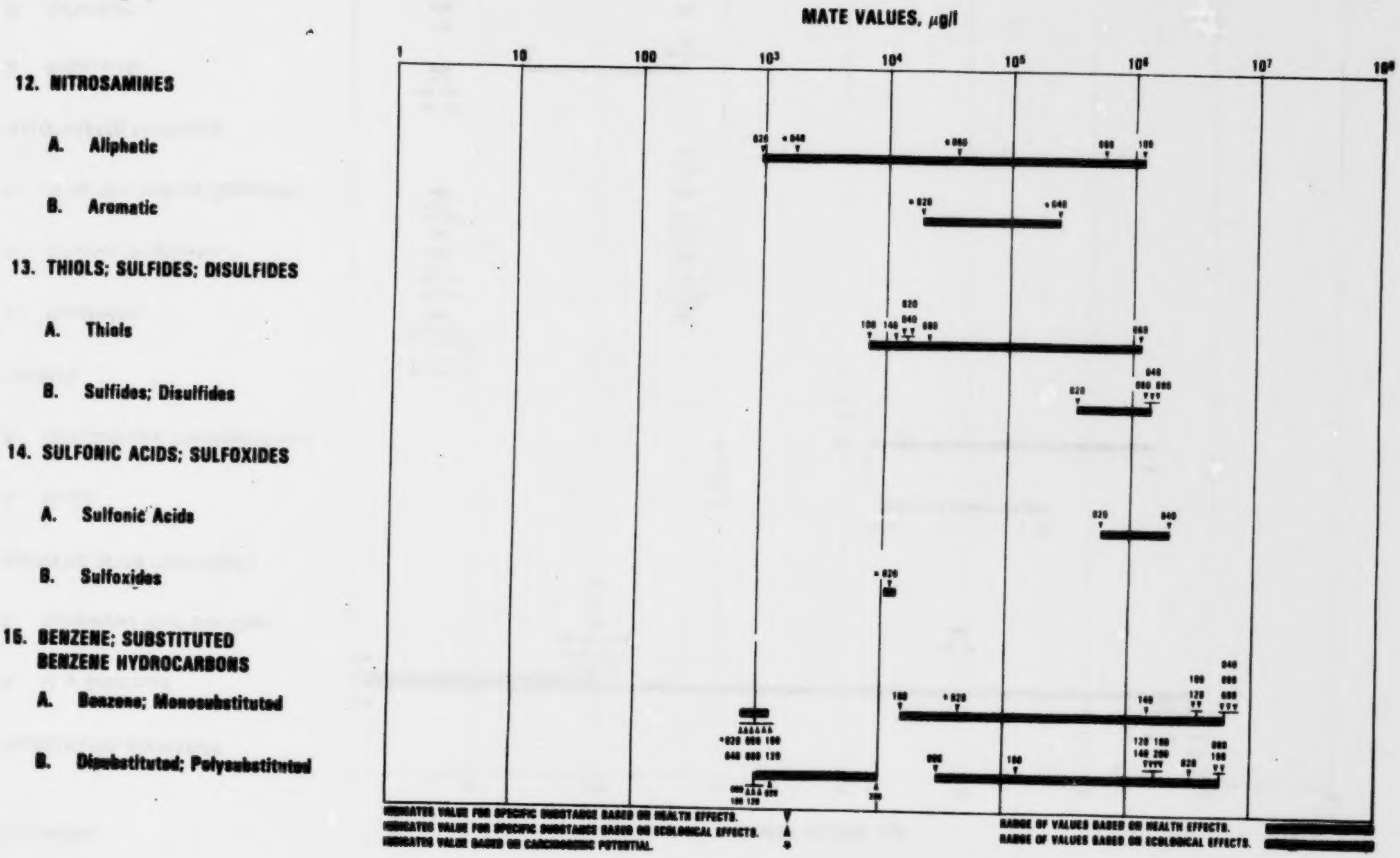

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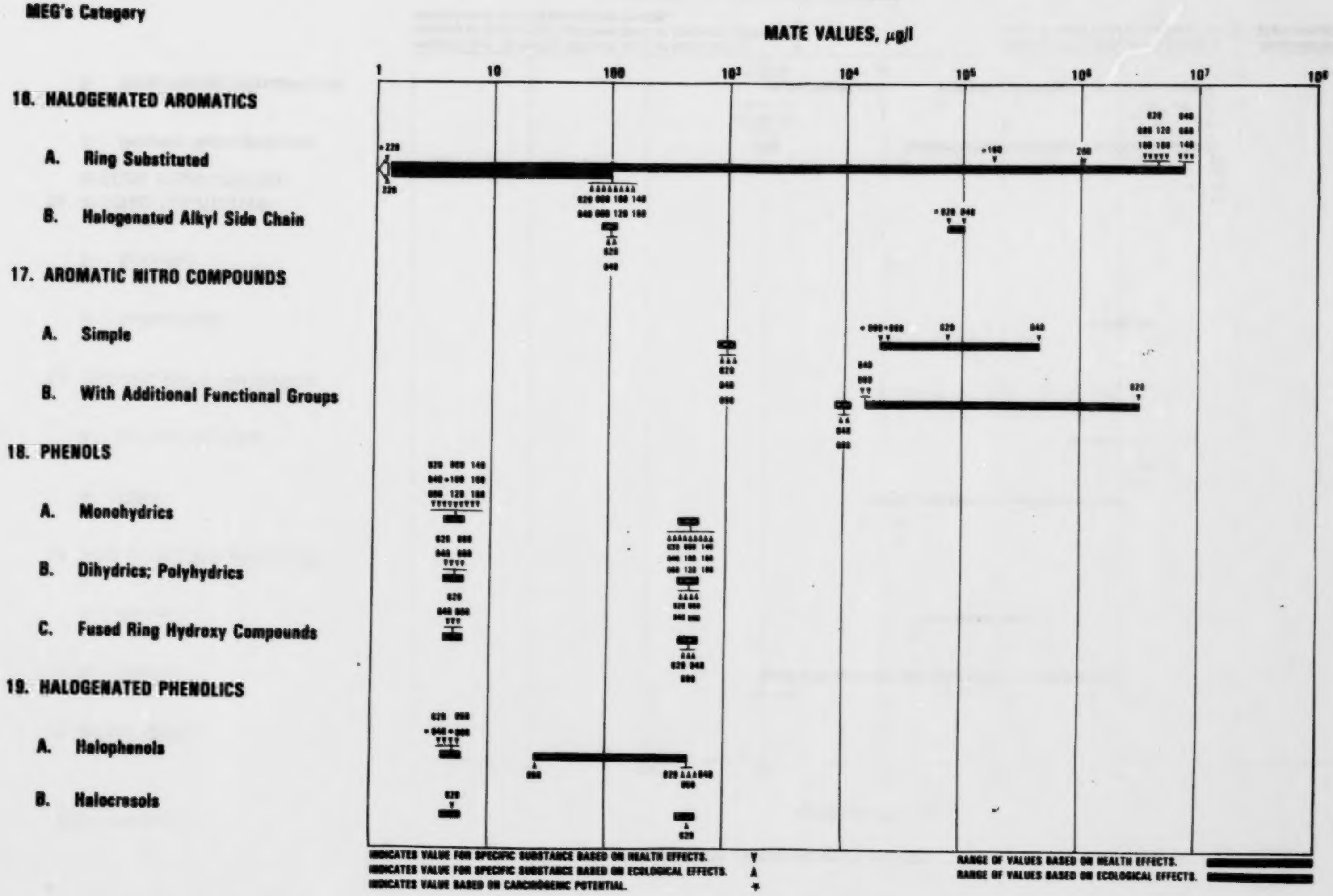

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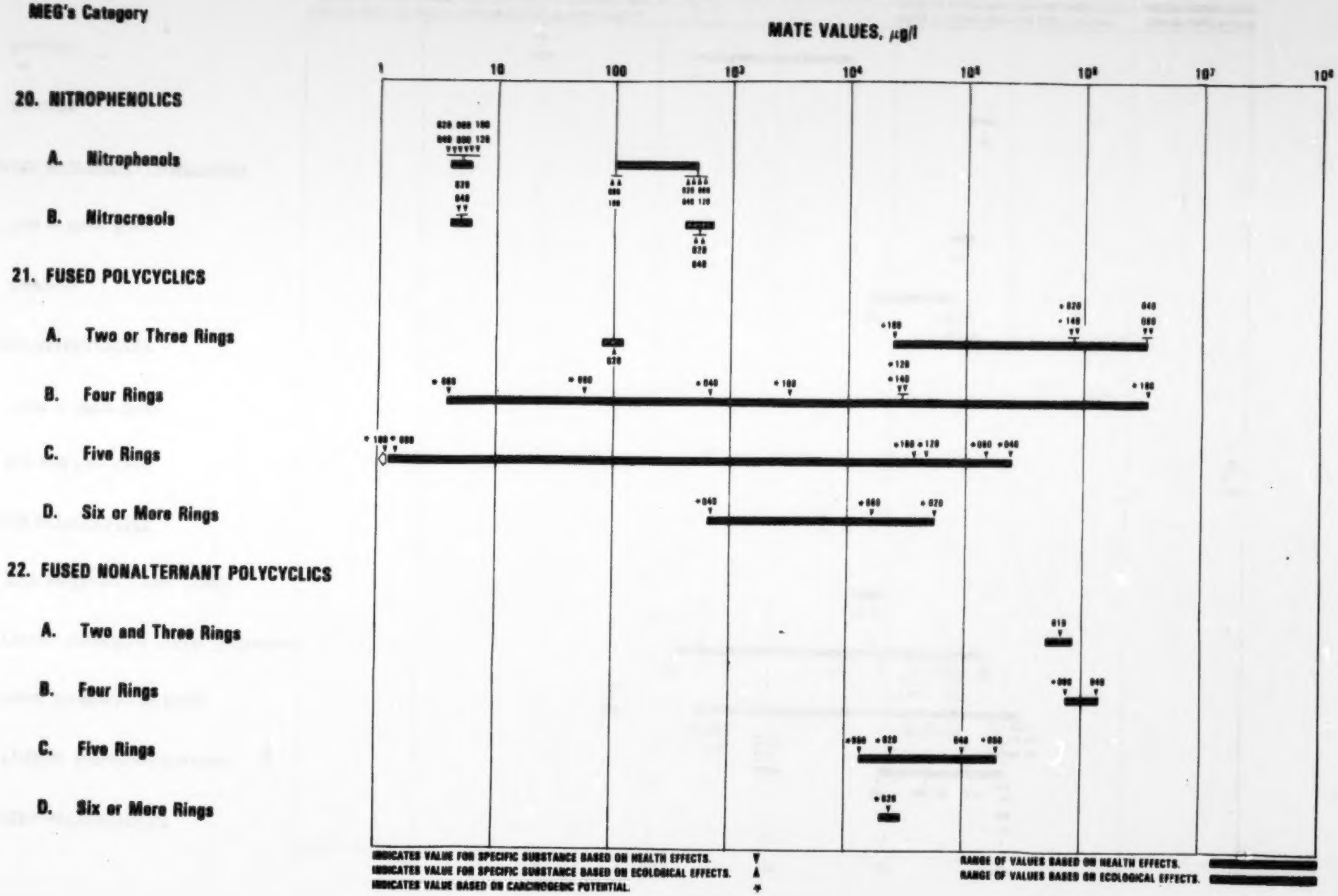

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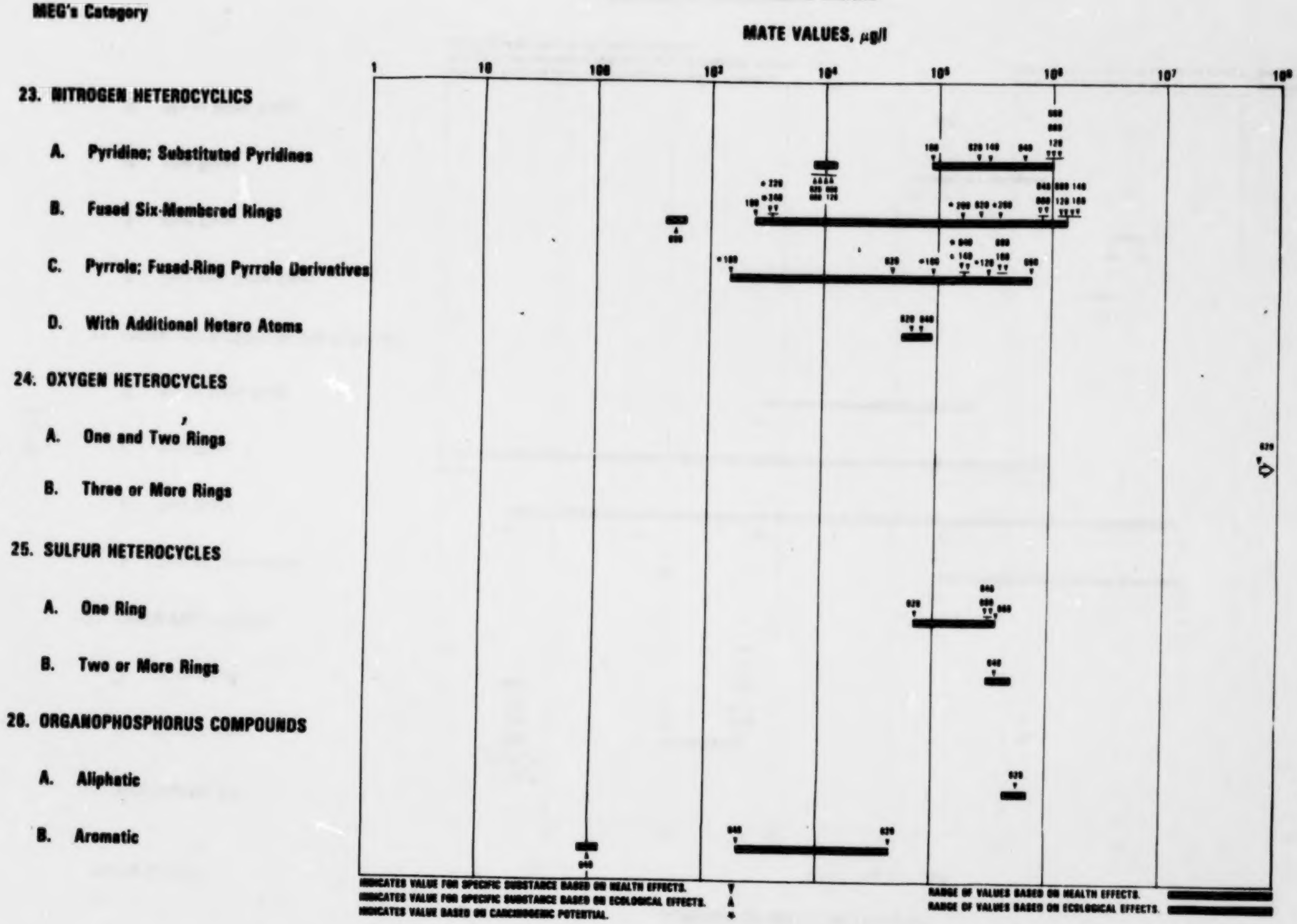

APPENDIX H

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